









SUMMARY  
OF  
THE PRINCIPAL MEASURES  
OF  
THE VICEROYALTY  
OF  
THE MARQUESS OF DUFFERIN AND AVA,  
IN  
THE PUBLIC WORKS DEPARTMENT.

DECEMBER 1884 TO DECEMBER 1888.

VOLUME VI.—APPENDICES.

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**SECTION I.**  
**Railway Policy.**





# LORD DUFFERIN'S VICEROYALTY.

FROM DECEMBER 1884 TO DECEMBER 1888.

## APPENDIX.

### RAILWAY POLICY.

No. 25 (Secret), dated 22nd September 1884.

From—The Government of India,  
To—The Secretary of State for India.

The resumption under Your Lordship's orders of the construction of the Sind-Pishin Railway has brought prominently under our notice the subject of railway communications on our North-Western Frontier generally. Much has been done during the last few years to improve these communications. The Attock bridge has rendered the line to Peshawar complete, and when the bridge which is being built over the Indus at Sukkur is finished, we shall have an unbroken line of railway from Karachi to Peshawar. But there are still certain other lines of communication required to complete the system of railways and roads which has for many years past been considered desirable, in order to place the North-West Frontier of India in a satisfactory condition of defence, and we are of opinion that the time has now arrived when these subsidiary lines should be considered, with a view to determining which of them should be constructed, and the time and order in which they should be undertaken.

2. We have therefore had the subject very carefully examined, both in our Military and Public Works Departments, and the conclusion at which we have arrived is that it would be advisable to take in hand at an early period the construction of the lines which we will proceed to describe.

3. Our North-West Frontier is principally open to attack by three routes—(1) *via* Pishin and the Bolan or Harnai Passes; (2) *via* the Ghurnal Pass, leading to Dera Ismail Khan; (3) *via* the Khyber and Kuram routes.

4. As regards the first or Pishin route, it will now be, in the first place, rendered defensible by the Sind-Pishin Railway running from Nari, through the Harnai Passes, to Shebo, with a branch to Quetta, which is now in active progress under the discretion, which Your Lordship has allowed to us, of making "such arrangements for the execution of the works as you may consider most conducive to economy of time and money."

5. Besides, this railway, however, there is a consensus of opinion in favour of the necessity for a fair military road to the northward of it, starting from it in the locality of Gwal or Kutch, and running past Thal-Chotiali down to Dera Ghazi Khan. The object of the road is twofold,—to cover the railway, protecting it from the Kakars and other lawless tribes, such as those in the Zhob Valley, whom we are at the present moment sending an expedition to restrain from further outrages, and to afford an alternative, or supplementary, route for troops and supplies in the event of military operations to the front.

## RAILWAY POLICY.

Regarding certain portions of this road, there are two or three alternative routes. The complete line at present most approved by the military and political authorities runs from Kuch Railway station, on the Sind-Pishin line, by Kowas, Ziarat, Smalan, Thal-Chotiali, Anambar, the Han Pass, Haji Hasinkh, and Fort Munro to Dera Ghazi Khan. We are undertaking further surveys, however, and details need not be discussed here.

The cost may be roughly estimated at 20 lakhs of rupees, and the length at 250 miles.

6. The road to Dera Ghazi Khan would, however, be of comparatively little use without a connection between that station and the Lahore-Karachi main line of railway at Sher Shah, near Multan. Dera Ghazi Khan, also, is even now inconveniently isolated. This connection would be supplied by an ordinary steam ferry to the opposite bank of the Indus, a steam ferry to carry railway wagons across the Chenab at Sher Shah, and an intervening length of about 26 miles of railway through Muzaffargarh. The cost would be about 25 lakhs of rupees. Bridges over the Indus or Chenab, especially the former, would probably be too difficult and costly to be worth making.

7. For the defence of the second route, the point requiring attention is Dera Ismail Khan, opposite the Ghumal Pass. At the present time railway communication only reaches the frontier line of military posts at Sibi and Peshawar, which are at least 560 miles apart. The extension of the railway from Sher Shah to Dera Ghazi Khan, above proposed, would still leave a gap of 310 miles between that station and Peshawar, over which the means of transit are difficult and tedious in the extreme. Dera Ismail Khan itself cannot at present be reached by troops in less than 15 days of rail, and ordinary marching across a partly desert country. We are of opinion that this isolation of our frontier line of defences, and comparative inaccessibility of the key to the easiest and most important entrance to India between the Khyber and the Bolan, involves considerable military danger. The defect would best be removed by converting from metre to broad gauge the 54 miles of existing railway from Lala Musa to Miani, bridging the Jhelum near there, and continuing the line for 153 miles, *viâ* Khushab and Kundian, to Darya Khan on the Indus, whence a temporary railway across the sandy approaches to the river and a steam ferry to Dera Ismail Khan (13 miles in all) would be provided. The bridge across the Jhelum has already been independently decided on, to accommodate the traffic from the salt mines at Khewra. The total cost of the conversion and extension would probably not exceed 125 lakhs of rupees.

Independently of military advantages, the line would be moderately remunerative, as the Ghumal Pass has for centuries been one of the principal trade routes between India and Afghanistan, and the trade is even now valued at 70 lakhs of rupees per annum.

8. Concomitant with the placing of Dera Ismail Khan in connection with the Indian Railway system stand two proposals for giving to that connection its full military effect.

(a) The first is the repair and improvement of the existing military road from Dera Ismail Khan to Banu and Kohat, and thence round to the Indus at Khushalgarh, whence a broad-gauge railway now runs into the Punjab Northern State Railway, near Rawalpindi. This would place a chain of highly important military posts in communication, and allow of the rapid transfer of troops from the Peshawar to the Dera Ismail Khan base, or *vice versa*. It would also aid

the flow of trade to the Khushalgarh and Darya Khan Railway termini. The cost has been estimated by the Punjab Government as under—

	₹
Road from Dera Ismail Khan to Bann . . . . .	8,90,000
„ Bann to Kohat . . . . .	8,40,000
„ Kohat to Khushalgarh . . . . .	1,91,800
Bridge over Kuram river . . . . .	4,80,000
„ Gambela river . . . . .	3,45,000
<b>TOTAL</b> .	<b>27,46,800</b>

or, say, thirty lakhs of rupees in round numbers.

(b) The second proposal is for the continuation of the railway from Darya Khan down the left bank of the Indus, to join at Muzaffargarh, or Kurashi, the short railway connecting Sher Shah and Dera Ghazi Khan, which has been referred to above in paragraph 6. This line would be very valuable from a military point of view, in linking the stations of Dera Ghazi Khan and Dera Ismail Khan, in facilitating the rapid transfer of troops between the two bases, or that of Sibi, and in enabling supplies, or reinforcements, from Europe to be thrown in wherever required. In fact, it would establish complete communication, by rail or good military road, along the whole line of defence from the Bolan to the Khyber. Being east of the Indus, it would be safely covered by the river. Our Military colleagues attach the highest value to the possession of this lateral communication, as well as means of supply and reinforcement from the south, by troops massed along the line of the Indus; and the advantage seems to us to be self-evident.

This portion of the railway (for it is really one) from Lala Musa round to Sher Shah, moreover, may bring some traffic to the Indus Valley Railway, and was advocated on commercial and administrative grounds by Sir Robert Egerton in 1881. It would probably be fairly remunerative in time, especially in the event of the construction of the Sind Sagar Doab Canal. The length would be about 128 miles and the cost probably 65 lakhs of rupees.

9. Independently of the “outer line of defences,” which we consider to be sufficiently provided for by the special arrangements above recommended, another project of importance has been suggested and supported by considerable authority, namely, that of a bridge over the Sutlej at Ferozepore, intended to connect that city with the branch of the Sind, Punjab and Delhi Railway, running from Raiwind to the river bank opposite that city. The line can thus be connected by a junction station with the metre-gauge railway running eastwards to Rewari, where it joins the Rajputana-Malwa system. A continuation from Ferozepore to Ludhiana, at some future time, will also be materially facilitated. The objects of this project are to place the arsenal of Ferozepore in direct connection with all the frontier railways, and to give additional means of communication from the eastward with Sind and the Western Frontier.

Of the military necessity of this bridge, it appears to us that there can be no question. The principal difficulty is the engineering one, the cost and the liability to destruction by floods being both considerable. Various projects, ranging in outlay from 15 to 56½ lakhs of rupees, have been drawn up, and no satisfactory conclusion has yet been arrived at (see Railway Administration Report for 1881-82, page 272, and Colonel Medley’s “Railways in Upper India,” page 15).

We have lately, however, been making fresh investigations, and have reasonable hopes that the bridge may be built for 40 lakhs of rupees, at which rate we include it in our scheme.

10. The following is a summary of our recommendations, to which we add the Sind-Pishin Railway, in order to bring into one view the whole

# RAILWAY POLICY.

scheme and outlay contemplated for the military protection of our North-West Frontier:—

Communications recommended.	Length, Miles.	Estimate Conventional Sterling.
(1) Railway, Nari to Shebo, with branch to Quetta .	175	2,000,000
(2) Railway from Lala Musa, <i>via</i> Darya Khan and Muzaffargarh to Sher Shah, with branch from Muzaffargarh to Indus opposite Dera Ghazi Khan, and bridge at Pind-Dadan Khan and ferries over Indus and Chenab . . . . .	361	2,150,000
(3) Ferozepore bridge . . . . .	5	400,000
(4) Road from Dera Ghazi Khan to Pishin plateau .	250	200,000
(5) Road from Dera Ismail Khan to Khushdadpur, <i>via</i> Kohat and Banu, including Kuram and Gambela bridges . . . . .	195	300,000
<b>TOTAL</b> .	<b>986</b>	<b>5,050,000</b>

The total outlay which appears to us desirable, including that for the Sind-Pishin line already sanctioned, is thus five millions in round numbers. An index map, showing the lines proposed, is appended.

11. With regard to the order in which the projects now recommended should be taken up, and the rate at which the whole should be proceeded with, we would remark that works of the nature proposed cannot, for the most part, be taken up one by one from year to year, or profitably executed by dribblets. Individually they occupy too long a time in construction. Once started, economy is best secured by keeping the establishments at their full working power, and by completing successive sections as an aid to the works on the rest, and in order to secure some return for the outlay at the earliest possible date. Funds must obviously be supplied according to the nature of the works, and not in equal annual instalments—still less by uncertain grants, the waste and

Government of India's  
No. 819 of October 2nd, 1879.  
Secretary of State's No. 495  
of December 11th, 1879.

other evils attendant on which have been fully recognised in the despatches specified marginally. The Sind-Pishin Railway is being proceeded with as rapidly as is consistent with economy. As to the other projects, portions of the roads might stand over for a while; but the railway, and especially the large bridges, should be put in hand as soon as preliminary arrangements will allow. The periods occupied in completing them may be taken at from two to three years for the roads, fully three for the railway, and fully four for the Ferozepore bridge. We consider these periods as the maxima consistent with economy.

We append a forecast, which has been prepared by our Director General of Railways, showing the time and manner of proceeding with the several works so as to combine reasonable progress with economy. This we propose for adoption, remarking that, while it is very desirable to ensure a fair start of the new works in 1885-86 by undertaking preliminaries during the current cold season, the actual outlay may be expected, owing to delay in arrival or adjustment of stores, and other causes, to spread rather more largely over the later years to the corresponding relief of the earlier ones.

12. We will now proceed to consider the financial aspect of our proposals, premising that we are of opinion that the whole cost of the Sind-Pishin Railway should be provided in whatever manner may be determined on for the rest of the projects.

We must also explain that we adhere to the proposals, contained in our Railway Policy Despatches, that certain indispensable railways should be constructed in the definite period of about six years out of funds to be provided

accordingly, which were reaffirmed in our Despatch No. 121 of the 28th April last. This decision on our part is in no way affected by the admitted necessity for frontier communications.

We have to provide against two evils—famine and complications on our North-West Frontier. Considering that the accepted famine cycle is near its close, most may well think the former the more likely to supervene; but it should not be forgotten that the best way of deferring the latter is to make timely preparation against them. The protection from both should certainly be provided concurrently, and to the full extent necessary in the case of each. Our subsequent remarks will proceed on this assumption.

13. There are three ways in which the necessary funds may be provided. We may allot annually in the budget such amount out of revenue as we can afford—a fixed amount, if possible: we may provide for them as far as possible in this way, and borrow only so much more in each year as may be necessary in order to bring the total allotment up to such sum as may be deemed necessary in order to carry on the works without undue delay; or, finally, we may borrow the whole amount required for these special works.

14. The first of these courses we do not advocate, because the annual surplus we could devote would not suffice, as already shown in paragraph 11, to complete these works within a reasonably short space of time. Moreover, the system of charging to revenue is peculiarly unsuited to works of the character of those proposed, because it tends to restrict and render uncertain the annual outlay. Railways cannot be economically constructed by grants (a) petty in amount, spread over a long period, (b) equal in amount from year to year, (c) uncertain till the financial conditions of each year can be foreseen.

15. The second course we deem undesirable, because it interferes unnecessarily, for an exceptional purpose, with the established system under which our ordinary loans for public works are carried on, and also precludes our making special arrangements for such loan as may be required, the nature of which we will presently explain. At present we have a system of spending  $2\frac{1}{2}$  millions a year on certain public works, and permission to borrow that amount, *minus* any sum by which, owing to surplus revenue (which is now usually realised) or other accretions, our cash balances may exceed our working needs.

This system is based on the following recommendation of the Select Committee of the House of Commons in 1879:—

“That all expenditure on the construction of Productive Public Works should be treated as borrowed money, so that if, instead of borrowing to the full extent of such expenditure, a part of the surplus revenue of the year can be devoted to this purpose, the general debt of India be treated as relieved, and the Productive Public Works debt as increased to such extent.” (*Report, page xvi.*)

Supposing, by way of illustration, this surplus sum to be a million in any year, and the annual loan therefore to be  $1\frac{1}{2}$  millions only, instead of the normal  $2\frac{1}{2}$  millions, then, if a new annual charge of a million for strategical communications supervenes, the financial result will be exactly the same whether the million of surplus be taken away to meet the new charge and the ordinary annual loan be raised to the full  $2\frac{1}{2}$  million limit, or whether things be left as they are and a million be raised separately for the strategical communications. In the one case we can say that we are making strategical railways out of Revenue, in the other that we are making them out of Capital; but there is not a whit of difference between the two, except in the name of the thing. Call the transaction what we please, the fact remains that *the new charge causes the additional loan.*

As regards the name of the thing, however, there is no advantage in borrowing to complete the normal  $2\frac{1}{2}$  millions, compared with borrowing separately. The surplus is just as liable to reduction by outside pressure or for other administrative claims now, as it would be if appropriated as proposed. A loan would stand behind to supplement its shortcomings in the one case as much as in the other; the amount to be borrowed would be the same in both; and neither method would afford any greater check or stimulus to economy than the other. On the other hand, the change of an established system is at all times undesirable, and carries special disadvantages in this case compared with the third course.

To the third course—namely, that of borrowing the whole amount required for these special works—we incline for the following reasons:—Although the railways and roads which we propose to construct will not be wholly unproductive, we cannot expect that they will be remunerative in the technical sense,—that is to say, we cannot look forward to their yielding a net return sufficient to pay 4 per cent. on the capital outlay within a prescribed period. On the other hand, they will yield a return which, though not represented by money, will be none the less substantial, in the increased security which they will give to our frontier. These benefits will not be confined to the immediate present, but will be of a permanent character, and it therefore seems to us legitimate that the burden which they entail should be distributed over a lengthened period, and should not be imposed wholly on the tax-payer for the time being. And if it is legitimate to borrow for this purpose, we think that there are reasons which also make it desirable. The expenditure is exceptional and will not recur. To the undesirability of altering an established system we have already alluded.

16. There is, however, a still more important argument in favour of borrowing the whole amount required for the construction of these communications,—namely, that the loan then need not be one of the ordinary nature, but may be on a distinct basis, such as to provide for the discharge of the capital obligation within a term of years.

17. Considering that the outlay in this, as in most instances of communi-

\* Some portions of the railway proposed will give a fair return in due time, but we cannot venture to say that the whole  $4\frac{1}{2}$  millions will pay 4 per cent within any calculable period. The roads are, of course, unremunerative, except in so far as they may feed the railway.

cations made for strategical purposes, is likely to be technically unremunerative,\* we hold that the loan contemplated to meet it ought not to be, like ordinary loans, a permanent addition to the debt

of the country, the reason for such exceptional treatment being that the outlay is, by the hypothesis, not an investment but a burden.

Capital invested in the "Indispensable" General Railways becomes indirectly productive at once, in the protection it affords against periodically recurring famine, and directly so at no distant date.

But with capital invested in military defences the case is otherwise. The outlay is a burden—entirely so in the case of roads or fortifications, to a greater or less degree, so in that of railways, according to the estimate of their net earnings. Its "protective" value is indefinite in the time of taking effect. Such outlay ought not to be left as a permanent burden on the national resources; it should be cleared off. And because such clearing off is desirable, but ought not justly to fall on, and if large cannot be met by, the tax-payers of a very few years, the best form of ensuring it is to provide this outlay by a loan automatically repayable in a reasonably short time, say thirty years.

18. We need scarcely say that we have not overlooked the discussions in

1866-68 on the question of providing funds for the construction of barracks in India, and we entirely concur in the principle then adopted by the Government of India and approved by the Secretary of State. The following words used by Mr. Massey in his speech of 5th March 1867 may be quoted as a good exposition of that principle:—

“Is all the cost to fall on the tax-payers of the day, and all the benefit to be derived, without any cost other than the annual repairs, by the tax-payers of 1870 and future years? We think we are not warranted in extending taxation for such a purpose, and that we shall fulfil our duty if we provide all that we can out of revenue and throw a part of the burden on our successors. We shall borrow a million towards the construction of barracks in the ensuing year; and even after this million has been borrowed, the remaining million will be charged to the revenues of the year. Thus, the sum we shall provide out of revenue for this extraordinary charge is nearly equivalent to the whole estimated produce of the new taxation. In fact, had it not been for this charge, we could have exactly balanced the estimates for next year.”

Our proposal, no doubt, carries out the principle thus enunciated in a different way from that adopted by Lord Lawrence's Government, but we think our plan is distinctly preferable, inasmuch as it distributes the burden evenly over a prescribed period, instead of dividing it into two portions, bearing with unequal pressure upon the present and the future.

19. Two important precedents for the course we propose are to be found in the manner in which the State debt, created by the purchase of the East Indian and Eastern Bengal Railways, has been dealt with. In the former case 32½ millions sterling were provided by annuities, terminable in 73 years. In the latter about 3½ millions are similarly to be dealt with by annuities, but the details have not yet been supplied to us by Your Lordship.

The debt we contemplate will be on exactly the same principle, only we consider that the term of repayment should be much shorter. If thirty years were adopted, the five millions would be discharged by annuities, costing £271,855 per annum, taking interest at 3½ per cent. Another method is that of fixed annual payments, comprising interest and sinking fund, which has been followed in India in the case of several loans to Municipalities and Port Trusts, and of the Mysore debt; but, on the whole, we are inclined to prefer that of annuities. In any case, there would be against the charge the set-off of whatever profit the new railway might yield.

20. For the reasons stated in the preceding five paragraphs, therefore, we hold that the simplest and wisest course is to leave alone, as it is, our existing system of borrowing annually, for “Indispensable” General Railways and Irrigation, a fixed sum, *minus* surplus revenue and accretions, and to borrow separately, on an automatically repaying basis, such sum for strategical communications as may from year to year be necessary in order to their completion in due normal course, without either special pressing on the one hand, or wasteful delays and uncertainties on the other.

21. In conclusion, we must explain that we are unanimously of opinion that the construction of the communications recommended above would strengthen our means of defence upon our North-West Frontier, and, by increasing the mobility of our army, would add to its defensive power.

Our honourable colleagues Sir Stuart Bayley, Mr. Ilbert, and Sir Auckland Colvin, however, do not concur in the suggestions contained in paragraphs 13 to 20 of this Despatch, and their Minutes on the subject are forwarded herewith.

\* \* \* \* \*



*Minute by the HON. SIR AUCKLAND COLVIN, K.C.M.G., C.I.E.*

1. I find myself, to my regret, at variance with the views of His Excellency the Viceroy and the majority of my colleagues; but I am so wholly opposed to the suggestions contained in the 13th and following paragraphs of this despatch that I am compelled to enter a strong dissent.

2. The frontier communications, which form the subject of the despatch, are by no means the first works of this kind which the Government of India has had to undertake. Like the frontier railways constructed in 1878-79, and the barracks built a decade earlier, they are designed purely for military objects, and for strategic purposes. They are not likely to be remunerative. They are precisely analogous, financially viewed, to the former works alluded to. The mode of finding funds should therefore, in my judgment, be identical.

3. In paragraph 13 of the despatch it is said—

“There are three ways in which the necessary funds may be provided. We may allot annually in the budget such amount out of revenue as we can afford—a fixed amount if possible: we may provide for them as far as possible in this way, and borrow only so much more in each year as may be necessary in order to bring the total allotment up to such sum as may be deemed necessary in order to carry on the works without undue delay: or, finally, we may borrow the whole amount required for these special works.”

The second of the methods above enumerated, it might have been added, is that laid down by the Secretary of State for India in his letter No. 252, dated 8th November 1865, for adoption on previous occasions—namely, to construct this class of works as far as possible out of revenue, and from borrowing only so far as revenue is not available. The reasons specially applicable to India for adopting that course will be found in Lord Lawrence's Minute of the 18th March 1868, in Mr. Massey's Budget Statement of 1867-68, in Sir John Strachey's Minute of the 21st March 1868, and in his speech on the Certificate Bill on 20th March 1868, in Sir Richard Temple's Budget Statement for 1869-70, and in Sir John Strachey's Budget Statement for 1880-81. Lord Lawrence held that, if the Government of India could pay its way, either altogether or in part, without incurring fresh loans, it was its clear duty to do so. In view of the great debt which India already owed, the heavy liabilities already incurred which appertain to the guarantee system, and the peculiar character of British power in India, he believed that the only prudent and wise course was to make good the wants of the day, so far as practicable, out of its income. Mr. Massey, while borrowing a million in 1867-68 on account of barrack expenditure, charged another million to revenue, saying, “I should have preferred to go on as hitherto, defraying this charge, special and temporary as it is, out of the revenues of India;” and added that the Government of India would fulfil its duty if it provided all that it could out of revenue, and threw part of the burden on its successors. He explained also why he considered the Portsmouth Defences precedent inapplicable to India. Sir John Strachey urged that borrowing should be resorted to only if revenue was incapable of meeting the charge without recourse to new and burdensome taxation. In his Budget Statement of 1880-81 he repeated, in more emphatic terms, this language. Finally, the Secretary of State considered it a matter “of course” that “expenditure of this kind ought to be provided for, if possible, out of the revenue of the current year; but if, at any time, the amount of expenditure which it would be expedient to incur cannot be drawn from the ordinary income of the year, it must be left to the Government of India to determine, in communication with the Home Government, in what manner the requirements of the public service shall be met.” These considerations have governed the mode of meeting the expendi-

ture on works of this class up to the present time; and, as the Member in charge of the Financial Department, I consider it my duty before having recourse to loans to find from revenue, so far as may be without unduly starving administration, the sums necessary for frontier communications, as my predecessors found them for the works constructed during their time.

4. In paragraph 15 of the despatch, objection is taken to what has been, as I have shown in my third paragraph, the method of raising funds hitherto prescribed for adoption, on the ground that it interferes unnecessarily for an exceptional purpose, "with the established system under which our ordinary loans for public works are carried on, and also precludes our making special arrangements for such loan as may be required, the nature of which we will presently explain." So far as I am aware, the hitherto practice has not been found, by experience in the slightest degree to interfere with the customary loans for public works. In 1868, as in later years, the Government of India was borrowing for public works, as it is still borrowing; but no complaint has as yet been made that the system pursued in the case of "extraordinary" works (as they were then called) interfered with the ordinary loans. If, as the despatch says, and as I quite agree, the change of an established system is at all times undesirable, then I am wholly at a loss to see on what grounds it is sought to recommend the "special arrangements" devised in the despatch in place of the system now in force. The expediency of special arrangements of the nature contemplated I will discuss presently.

5. I do not think it necessary to enter into the question as to whether or no the new charge causes the additional loan, because it has no practical bearing on the matter before us. Whatever, viewed abstractedly, may be the case, in point of fact, if frontier communications are charged to Capital and not to Revenue, a surplus of greater or less extent will appear upon our accounts. One of two things will then inevitably happen: either the Departments will press for increased expenditure, and it will practically be impossible to resist proposals which, however objectionable, may, in view of such surplus, be plausibly put forward; or, in order to enforce economy, we shall be obliged to remit taxation. Bearing in mind the great remissions of taxation which have taken place during very recent years, and the peculiar dangers to which the Indian revenues are liable, the time has not yet come when we can with safety make further reductions. Reduction of taxation at the present time would, in my judgment, be a far less evil than profuse and needless expenditure; but none the less, it would be premature; and, in view of the limited resources open to us in India, and of the unforeseen calls to which we are liable, very dangerous. Apart from these considerations, I apprehend that the precedent of meeting this expenditure solely from loans (should it be admitted) will be fruitful of most pernicious consequences. It will be sought hereafter on the strength of such a precedent to charge to loans various other schemes, which might have been properly opposed on the ground that the revenue resources of the Government were incapable of meeting them. There is no more wholesome check upon extravagance, whether it arises from the desire to hasten works of which the utility is doubtful, or which admit of being gradually carried out, or whether it is caused by apprehensions as to danger outside our frontiers, than the necessity of finding funds with which to meet the hobby or the scare of the hour. In India, where the Financial Department cannot appeal from administrative pressure to the support of a representative body, an authoritative, self-imposed check of this nature is all the more necessary, and is, to my mind, if we are to be preserved from disorder, imperative. If facilities are to be given for borrowing in order

to meet proposals of this kind, our loans will be indefinitely added to, while ordinary expenditure will be wantonly increased. Hence, on every consideration of economy in the present and prudence for the future, I wish emphatically to protest against charging frontier communications to loans, without any attempt to meet them, in whole or in part, from Revenue.

6. The contention that by the "special arrangement" put forward,—*viz.*, by borrowing separately for frontier communications, and establishing a sinking fund especially for the loan contracted on this account,—we are in spirit, if not in the letter, acting on the principle adopted in 1867-68, rests entirely, it appears to me, on a fallacy. We shall be engaged in two operations,—the finding of funds for our general railways, and the finding of funds for our frontier communications. The money required for a sinking fund for the latter would be so much abstracted from the funds necessary for the former, and (unless we adopt the course alluded to in the last paragraph) we should, therefore, have to borrow on account of our general railways, annually, a sum precisely equivalent to that which we had withdrawn from our resources to provide the sinking fund for frontier communications. At the end of thirty years, or whatever the term might be, the debt incurred on account of the general railways would be increased by a figure equal to that which had been devoted to the extinction of the loan for frontier communications. Posterity, saddled with the interest on increased borrowings equivalent to the sum which had been withdrawn for the sinking fund, would in no way that I can see benefit; while, on the other hand, the tax-payer of the present and intermediate day would have to bear for his part the heavy burden imposed upon him from Revenue for a phantom sinking fund. The distribution of pressure would be equalised only in the sense that the immediate present and the remote future would be equally subjected to taxation. Should a famine cycle, it may be added, be approaching us, we should very shortly have to suspend our so-called sinking fund.

7. The arguments, finally, on which the Government of India based their decision in 1868 have even greater force at present: "When these works are finished," wrote Lord Lawrence, "and this will not be accomplished, I am satisfied, in the period generally supposed, we shall have to construct manifold other works, each deemed very important and imperatively necessary, such as fortified posts, places of refuge, drainage works, and many others, which will absorb vast sums of money. Now, none of these will be really productive, though all may be undeniably very important" In other words, each successive generation has its peculiar burdens of this nature, and each, so far as possible, should meet them from its own resources. It is said in the despatch that the expenditure now contemplated is exceptional and will not recur. This precise class of expenditure may possibly not recur; but nothing could show more conclusively than the situation now before us how circumstances may saddle our successors, as we are saddled, with analogous unforeseen expenditure. Again, all that was urged against loans in 1868 applies with much greater force in 1884, in view of the very serious change which has since taken place in the value of silver, and of the additional burden in the form of exchange which loans entail upon our revenues. The more we borrow, it may be added, the more certainly, in view of the limited resources of the local market, and of the competition of local bodies, such as the Calcutta and Bombay Port Trusts (about to enter the market for considerable sums), must we increase our sterling debt. If, indeed, we are to borrow for all kinds of railways, I think it is extremely probable, in view of the above grave considerations, that we shall find ourselves forced to reduction in the expenditure on general railways almost equivalent to what it is desired to borrow for frontier communications. Further, the policy of increased

borrowing for works in which we are embarked will for some years not return an adequate profit, and, *pro tanto*, this additional burden must fall on those who come after us. Our position and resources are, finally, stronger now than they were in 1868, or when the frontier railways were commenced in 1878, and what could be accomplished from revenue then is proportionately easier of accomplishment at present.

8. I myself think it exceedingly doubtful whether there is any such urgent need for the rapid construction of frontier communications as to compel us at present to have recourse to borrowing on that account. If, however, I should prove to be wrong in this respect, either owing to the revenues falling short of what may be expected, or to inevitable increase of ordinary expenditure, or to the need of pushing on the works at greater speed than I think necessary, I should have no objection to borrowing the difference between what we can furnish from revenue and what may be required. Assuming, however, that a period of about six years is a sufficient period for the construction of frontier communications, I see at present no reason for doubting that, unforeseen accidents apart, they may be met almost wholly from revenue.

9. So far as I am personally concerned, I can only give my adherence to the second section of paragraph 12, commencing "We must also explain," &c., subject to the result of consideration of the subject after final exchange of views with the Secretary of State on the Report of the Parliamentary Committee. I would also qualify the last section of that paragraph by inserting the words "so far as the finances will admit" immediately before, and at the commencement of (1) the passage now beginning "The protection from both should certainly," &c.

*September 19th, 1884.*

A. COLVIN.

I agree with Sir A. Colvin that these frontier communications should be constructed as far as possible out of revenue, and from borrowing only so far as revenue is not available. Exceptional expenditure of this kind is always recurring in various forms and for various reasons. I share Sir A. Colvin's doubts as to whether there is such urgent need for rapid construction as will make borrowing necessary.

C. P. ILBERT.

I agree in Sir A. Colvin's objection to the 13th and subsequent paragraphs of the despatch, and consider that the expenditure should be provided for as proposed in the early part of paragraph 3 of Sir A. Colvin's minute.

S. C. BAYLEY.

No. 148 (Railway), dated 27th November 1884.

From—The Secretary of State for India,

To—The Government of India.

I have considered in Council Your Excellency's letter, dated the 22nd of September, No. 25 (Secret), with a Minute by Sir Auckland Colvin, concurred in by Mr. Ilbert and Sir Steuart Bayley, and the first two paragraphs of Your Excellency's Minute of the 22nd of September, dealing with a proposal to construct certain railways and military roads for the purpose of placing the north-west frontier of India in a satisfactory condition of defence. I have at the same time taken into consideration your letter of the 29th of September, No. 150 (Railway), giving the views of your Government on the general question of railway communication in India, after receiving the report of the Select Committee of the House of Commons, which examined the subject during the last session of Parliament.

2. In the latter letter Your Excellency makes no allusion to the frontier communications: and in the earlier letter you state that your decision on the general question is in no way affected by the admitted necessity for such works, and that, having to provide against the two evils of famine and complications on the north-west frontier, you are of opinion that "the protection from both should certainly be provided concurrently, and to the full extent necessary in the case of each."

3. I regret that I am unable to concur with your Government as to the manner of effecting these objects. I am of opinion that it is a prudent and a really economical measure to plan and to carry into execution, with as little delay as possible, a system of railways and roads designed to strengthen our military position on the north-west frontier; and also that it is desirable to complete a well-devised scheme for preserving the country from the effects of famine, and for increasing the facilities for commerce. But the rapidity with which the works necessary for these purposes shall be constructed must manifestly depend on financial considerations. Whatever be the object with which a great system of railroads is undertaken, whether for the protection of the country from famine or from war, the effect must be the same as regards the money market, the strength of the Public Works Establishment, the demand for labour, and the increase of prices; and hence I have thought it right to treat Your Excellency's two letters as forming one comprehensive scheme for the extension of railways in India.

4. Your consideration of the report of the Select Committee has not led you materially to modify the views that you had previously expressed. You have now removed from the category of railways that you deem indispensable the one from Vizagapatam to Raipur, and you have substituted for it one from Kontera through Cuttack to Puri. With this exception, however, you adhere to Schedule A, which accompanied your letter of the 29th of January 1884, No. 27, as representing the lines that you desire to see constructed by the Government during the next six years, which are thus divided in the forecast accompanying your letter of the 29th of September:—

	Estimated Cost.	Outlay to end of 1883-84.	Amount needed to complete on 1st April 1884.
	₹	₹	₹
Works in progress . . .	10,88,02,991	about 3,67,60,991	7,20,42,000
Not commenced . . .	7,81,01,000	.....	7,81,01,000
Extra capital for open lines .	1,80,00,000	.....	2,73,00,000
	20,49,03,991	.....	17,74,43,000
[To which must be now added the Frontier communica- tions.]	5,05,00,000	.....	5,05,00,000
	25,54,03,991	.....	22,79,43,000

These projects do not include the undertakings that it is intended to entrust to private Companies working with Government assistance, the cost of which, in your letter of the 28th January 1883, No. 29, was estimated at about ₹12,23,00,000.

5. The scheme of frontier communications described in your letter of the 22nd of September appears to me to be well adapted to the purpose that you have in view; and I desire to express, not merely my general concurrence in its adoption, but my hope that it will be completed within the four years over which Your Excellency proposes to spread the expenditure. The line to which your efforts are naturally being first directed is the Sind-Pishin Railway.

6. Accepting the estimates for these works, I find that, in the two forecasts which accompany your letters, it is proposed to incur the following expenditure by Government on railways, and on other public works constructed from borrowed money:—

WORKS.	1884-85.	1885-86.	1886-87.	1887-88.	1888-89.	1889-90.	Total of six years.
	Lakhs.	Lakhs.	Lakhs.	Lakhs.	Lakhs.	Lakhs.	Lakhs.
General Railways . . . .	381	296	265	265	265	287	1,759
Frontier Railways . . . .	113	225	80	25	...	...	443
Total Railway Expenditure after 31st March 1884 . .	494	521	345	290	265	287	2,302
Of which, to be provided from Famine Insurance Grants . .	111	50	50	50	50	50	361
Ditto from Provincial Contributions and Lapses . . . .	17	...	...	..	...	..	17
Ditto, recovery from Nagpur-Chhattisgarh line . . . .	...	...	...	...	...	63	63
	128	50	50	50	50	113	41
Leaving the amount to be borrowed for Railways . . . .	366	471	295	240	215	174	1,761
To which add the amount to be borrowed for Irrigation . . .	70	70	70	70	70	70	420
And for Military Roads, and past expenditure on the Sind-Pishin line . . . . .	12	18	23	9	...	...	62
Making the Total to be borrowed for Public Works . . . .	448	559	388	319	285	244	2,143

7. From the total of 2,243 lakhs which in the six years it is proposed to charge against borrowed money, I find it necessary at the outset to make certain deductions. I cannot admit the propriety of so treating the past expenditure on the Sind-Pishin Railway in 1883-84 . . . . . 12½ lakhs.

the special grant made in the Budget of 1884-85 for the Harnai

Road (included in the 113 lakhs for this year on frontier railroads) . . . . . 7¼ "

or the outlay on the military roads . . . . . 50 "

69½ lakhs.

The whole of these 69½ lakhs must be treated as charges on revenue, thus reducing the aggregate that may possibly have to be obtained by borrowing, to 2,174 lakhs.

8. In the 11th paragraph of your letter of the 22nd of September, you say that "funds must obviously be supplied according to the nature of the works, and not in equal annual instalments." Although this remark is sound when applied to a particular work, it does not apply to a scheme comprising a

number of projects, some of which can without difficulty be delayed if the expenditure on others is unusually heavy.

9. The amount which, in recent years, it has been considered right to borrow, when necessary, for Productive Public Works, has been 250 lakhs a year, supplemented occasionally by the sums needed for the completion of the East Indian Railway. Your Excellency proposes to add to this amount 35 lakhs a year for railways, as well as to borrow in the present year about 69 lakhs on account of arrears of Productive Works; and you also desire to construct the whole of the frontier communications by means of loans. On this subject I concur in the opinion of Sir Auckland Colvin, rather than that which has been adopted by the majority of your Council, and I think it most undesirable to show a surplus of revenue over expenditure, by failing to charge each year with whatever portion of the necessary expenditure it can bear, and which is properly chargeable thereto, while I hold that it would be unsound and dangerous to remit taxation on the strength of a nominal surplus so obtained. At the same time, really urgent works should not be delayed, by refraining from raising reasonable amounts by loans when requisite for their completion within a specific time. The course that I am of opinion should be pursued is that the frontier communications should be completed with the utmost speed consistent with economy of construction; that as far as possible their cost should be provided from revenue; but that, when the revenue available after meeting other essential charges of administration is exhausted, your Government should not allow the proposed works to be retarded, but should prosecute them with borrowed money.

10. In my despatch of the 14th of August, No 89 (Railway), I referred to the Select Committee's recommendation that the technical distinction between productive and protective lines should not be maintained, but that the bulk of the lines undertaken should be self-supporting; and I stated my willingness to authorise an addition to the amount of the annual loan of about £400,000 or £500,000, especially for famine lines. In view of the urgency of the requirements that you have now brought to notice, I sanction, for the present, the extension of the maximum limit of borrowing to 350 lakhs in any one year, which seems to me the extreme limit to which it is prudent to pledge our resources for such purposes; and, accordingly, this amount must be held to cover all the expenditure of the Public Works Department from borrowed money, whether for ordinary railways and irrigation, open lines, arrears of previous grants, protective works, frontier communications, or any other purpose, while lapses in previous years should only be subsequently made good from the balances if that is practicable without unduly reducing them; and no resort must be had to borrowing unless the amount cannot be provided from revenue.

11. I would further remark that there is an important difference between the works now specially referred to and those for which it has heretofore been held to be legitimate to provide funds by borrowing,—*viz.*, that the outlay on the latter class may be properly regarded as an investment on which there is reason to anticipate a return which eventually will meet the interest on the borrowed money required for them. This character, as you recognise, will not necessarily apply to the railways and other public works designed for the military protection of the frontier, and the necessity for limiting, as far as possible, the permanent charge they will bring on the revenues in future years is obvious.

12. I find that in the five years from 1879-80 to 1883-84 (excluding, on the one hand, the increase of debt caused by the purchase of the East Indian Railway, and, on the other hand, the decrease arising from the operations of the

Commission for the Reduction of Debt), the Rupee Debt was increased by 1,526 lakhs, while the Sterling Debt has been reduced by £2,018,000, equal, at 1s. 8d. the rupee, to 242 lakhs; the amount of borrowed money, therefore, which has been at the disposal of your Government during the last five years has been 1,284 lakhs, or an average of 257 lakhs annually. The sanction now conveyed to you will enable you, if you find it really necessary, to add to your funds for public works from borrowed money very nearly a crore of rupees in each year; and the total amount of 2,100 lakhs in the six years is very nearly equal to the aggregate of 2,174 lakhs which I have above shown to be the extreme sum admissible as a charge upon the Debt.

13. If, however, as is probable, your Government may not have at your command in the earlier years the amounts that you desire, some reduction must be made, and I am of opinion that it should not fall upon the frontier lines, although I doubt if the whole expenditure contemplated in 1884-85 and 1885-86 will be incurred during those years. Until the funds can be provided, the expenditure on works in Schedule A must be restricted accordingly; and I leave it to Your Excellency to decide the best manner of rearranging the expenditure on the lines already sanctioned.

14. In so doing, it will be necessary for you to bear in mind the recommendation of the Select Committee, already cited, that the bulk of the lines undertaken should be self-supporting. According to paragraphs 6 and 9 of Your Excellency's letter of the 29th September, your general scheme includes 2,800 lakhs of outlay, of which about 725 are for unproductive lines; with the addition of the frontier railroads, the amounts become 3,250 and 1,175 lakhs respectively.

15. While thus enlarging your powers of borrowing for the works the urgency of which is recognised, I must also impress upon you the necessity for regarding any available surplus of revenue over the ordinary expenditure as being primarily applicable to meeting the exceptional charges which your Government is now called upon to bear, and the consequent importance of using every effort to avoid all expenditure usually classed as ordinary which is not strictly necessary. In ordinary public works, and in all branches of administration, the utmost economy should be practised; and the Provincial Governments, as well as the Departments more directly under your own orders, should be enjoined to co-operate in the endeavour to keep their expenditure within the limits of strict economy, so that the unavoidable demands upon your Government for services which cannot be postponed may, when they arise, be met as far as possible from the revenues of the year, and the necessity for adding to the debt may be to the same extent avoided.

16. The question whether the money shall be borrowed in India or in England is one that can only be decided from time to time according to the circumstances. In my despatch of the 15th of May, No. 131 (Financial), I communicated my decision to relieve you of the necessity of borrowing in India this year, by reducing the drawings to the extent of 250 lakhs; and my telegram of the 3rd of September accepted your proposal for a further temporary reduction of 65 lakhs. If Your Excellency should be of opinion that you can economically spend the full 350 lakhs from borrowed money this year, I shall be prepared to make a further reduction of 35 lakhs; but, as that will involve a total addition to the sterling debt of nearly £3,000,000 in this year, I refrain from any alteration of the amount to be drawn until I learn your opinion on the point.

17. Your Excellency proposes, as a ground for providing the whole outlay on frontier communications from borrowed money, to place the loan on a distinct basis, which may provide for the discharge of the capital obligation within



a term of years. The objection to the institution of an ordinary sinking fund for the extinction of a particular loan, at the same time that other loans are continually being raised, is manifest; the payment in reduction of the earlier debt can only be provided by adding to the new debt; and it is much less wasteful to lessen the amount of fresh borrowing. Moreover, the sinking fund in such a case would be sure to be suspended on the first pressure arising from famine or war. Your Excellency, however, would prefer to raise the money by terminable annuities, on which I need only observe that such a scheme appears to me impracticable on any reasonable terms, considering the total absence of demand for such securities in India, the relatively low price which the Annuities of the East Indian Railway and Eastern Bengal Railway actually command in the London market, and the extent to which that market has been, and may hereafter be, called upon to accept them from time to time as the Guaranteed Railways are purchased by the Government.

18. The charge for interest on the debt to be incurred must, therefore, I fear, be treated as permanent; and, in so far as the amount is borrowed in this country, there will be the great disadvantage that the interest will have to be added to the large sum at present needed for the home disbursements. This is an additional reason why the increase of the debt, and especially the sterling debt, should be kept within the strictest limits. To the interest payable on the sums directly borrowed, moreover, may have to be added a considerable charge for interest as a consequence of the arrangements now under discussion with the promoters of private companies for the construction of railways; and, as the returns from the various lines as they come into operation will be necessarily received in India, the burden created by the increased charge for interest in this country will not be diminished.

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No. 35 (Railway), dated 3rd March 1885.

From—The Government of India,

To—The Secretary of State for India.

We have had the honour to receive Your Lordship's Despatch No. 148 (Rail-

\* No. 150 (Railway) dated  
29th September 1884.

No. 25 (Secret), dated 22nd  
September 1884.

way) dated 27th November 1884, together with telegrams of that date, and 2nd December 1884, which deal with our two despatches\* on Internal and Frontier communications as "one comprehensive scheme."

Your Lordship in Council approves of the three objects,—namely, "strengthening our military position on the north-west frontier," "preserving the country from the effects of famine," and "increasing the facilities for commerce," which the Government of India have set themselves to promote, and accepts the individual projects proposed.

2. Proceeding to details, the despatch does not dwell on the railways which it is proposed to entrust to private companies. We have reason to believe that arrangements have been practically concluded with one company for the "Bhopal system," in which the Jhansi-Manikpore Railway and the Kutni-Etawah section of the Bilaspur-Etawah project are comprised, and with another for the Nagpore-Bengal line. Negotiations we understand to be pending regarding the remainder. We have therefore merely provided, in the new forecast appended, for the completion of the Kutni-Umaria section of the Bilaspur-Etawah Railway, which has been commenced provisionally by the State pending arrangements

with a company for the Umaria Colliery, and for advances to the works on the Bhopal and Nagpore lines up to the close of the current financial year.

3. Your Lordship in Council rules, in the first place, that the proposed outlay on the two military roads (50 lakhs) and the past expenditure on the Hainai Road or Sind-Pishin Railway ( $19\frac{1}{2}$  lakhs) shall be debited to revenue. The latter has already been carried out, and the Finance Department have arranged to treat the former charge as independent of their revenue grants for railways, and to provide 10 lakhs for it in the coming Budget. The remainder of this despatch will therefore relate to railways alone.

4. With respect to the remaining railways, to be made by State agency, the conclusions in the despatch may be very briefly summarised as under—

*1st.*—The frontier communications should be completed “with the utmost speed consistent with economy of construction” (para. 9), and, if possible, “within the four years” proposed (para. 5); and any reduction of expenditure arising from want of funds in earlier years should not fall upon them, but upon the general railways in Schedule A (para. 13).

*2nd.*—The proposal to borrow for frontier communications upon a distinct basis, such as to discharge the capital obligations within a term of years, is disapproved (paras. 17 and 18).

*3rd.*—The maximum limit of borrowing for Public Works capital outlay, “whether for ordinary railways and irrigation, open lines, arrears of previous grants, protective works, frontier communications, or any other purpose,” is to be “350 lakhs in any one year” “absolutely.”

*4th.*—In addition to the 350 lakhs which may thus be borrowed for Public Works, Your Lordship impresses on us “the necessity for regarding any available surplus of revenue over the ordinary expenditure” or “revenue available after meeting other essential charges of administration,” as being “primarily applicable to meeting the exceptional charges which your Government is now called upon to bear.”

The first and second of these conclusions, in one aspect or another, go somewhat beyond the views of various members of Lord Ripon's Government; the third is opposed, in respect of open line capital, to the recommendation to which we invited the special attention of Your Lordship and the Select Committee of the House of Commons in paragraph 18 of our Despatch No. 27 (Finance and Commerce), dated 29th January 1884. We have determined, however, to accept Your Lordship's decisions upon these points without demur.

5. Before submitting the forecast which we have drawn up in compliance with Your Lordship's desire, it is necessary to examine what funds will be available, under the recent orders, for our disposal. We observe that Your Lordship in the 12th paragraph of your letter assumes that we shall be able to add to our funds for Public Works from borrowed money very nearly a crore of rupees in each year, and that this sum will be sufficient to enable us to carry out the complete scheme of railways within the term recommended by the Parliamentary Committee, and, so far as frontier railways are concerned, in four years. This calculation, however, is inaccurate, inasmuch as the sums required for open lines on the East Indian and Eastern Bengal Railways were outside the 250 lakhs hitherto annually borrowed, and if these sums are to be provided in future from the 350 lakhs which it is now proposed to borrow, the net sum available for construction will be very much diminished. In the estimate

which we are now submitting, the expenditure on the open lines of these Railways is as follows :—

1884-85 . . . . .	51½ lakhs,
1885-86 . . . . .	58 "
1886-87 . . . . .	55 "
1887-88 . . . . .	30 "

and not less than 30 lakhs annually till the close of the five years.

The net sum, therefore, by which our resources will be increased, is not a crore of rupees, but in the first year 48½ lakhs, in the second 42, in the third 45, and in the remaining years 70 lakhs, at the most.

6. On the other hand, the concession of the Bhopal system and the Nagpore-Bengal Railway to companies, which, we understand, is imminent, will entitle the Government of India to a refund of about 39 lakhs advanced from the Productive grant for works commenced. We conclude that Your Lordship will have no objection to the re-grant of this and the other similar advances on the receipt of the amounts respectively; 2nd, the Jhansi-Manikpore Railway, which was provided for in the forecast of September last as a State work, will be included in the Bhopal system conceded to a company. As Your Lordship was aware of this fact when the despatch now under consideration was written, we assume that the grant of 350 lakhs is irrespective of it. A refund of 31½ lakhs similarly advanced, together with the non-prosecution of the line by the State, will thus set free 170 lakhs for other lines in the schedule.

7. Finally, we may assume, for the purpose of the revised forecast which we have now to make, that there will be an annual grant of 50 lakhs from Revenue: but it is important to remember that this annual grant must be contingent on the financial circumstances of successive years. Grants made from Revenue to the Public Works Department will be liable, should circumstances compel us, to be resumed in the course of a year like other grants. In the event, however, of economies being rendered imperative by unforeseen circumstances, they should be considered of the nature of a preference charge in their relation to other reductions.

8. With these remarks we present the following forecast :—

WORKS.	1884-85.	1885-86.	1886-87.	1887-88.	1888-89.	1889-90.	Total of six years.
	Lakhs.	Lakhs.	Lakhs.	Lakhs.	Lakhs.	Lakhs.	Lakhs.
GENERAL RAILWAYS—							
In progress . . . . .	253½	98	102½	76	41½	...	567
Not commenced: stores and working capital . . . . .	—3½	18½	29	162½	278½	264½	749½
Total of above . . . . .	250½	111½	131½	238½	320	264½	1,316½
Open line capital . . . . .	138½	119	85	60	60	60	522½
Total General Railways . . . . .	389½	230½	216½	298½	380	324½	1,838½
FRONTIER RAILWAYS . . . . .	79	184	163½	81½	...	...	507½
GRAND TOTAL . . . . .	467½	414½	380	380	380	324½	2,346½

9. This forecast must, however, be considered subject to important reservations :—

(1) Some lines are as yet only roughly estimated for, and there may even-  
tually be excesses; the Sind-Pishin Railway, in particular, is a very

uncertain item. We hope, however, that such excesses, if they arise, may not have a greater effect than that of deferring the depletion of the schedule till the end of the last year of the series, for which the forecast provides, it will be observed, 55½ lakhs less than the normal 380 lakhs.

- (2) The apportionments of annual outlay are made to suit the financial demand for equal annual allotments, not the constructive requirements of the several works, whence much inconvenience and some delay and waste may ensue.
- (3) Lapses are inevitable, especially on English indents, and if they are in any instance not re-granted, the forecast will be deranged, and it may even be impossible to curtail Indian outlay to meet an unexpected home liability.

In the framing of this forecast, the new Madras famine lines are unavoidably put back, for two years in most cases. This is a grave evil, which we emphatically deprecated in paragraph 11 of our Despatch No. 150 of 29th September last, and which is freshly illustrated by the present scarcity in Bellary and Anantapur. It might, however be considerably mitigated if the recovery of 70 lakhs on account of the Nagpore-Chhattisgarh Railway, for which credit has been taken in the forecast as an extraordinary asset, were allowed to be spent on these lines in 1885-86 and 1886-87, if then received from the new company. We request Your Lordship's approval of this course.

10. The perusal of the above statements and figures will show Your Lordship that although, should none of the anticipated sources of income fail us, we shall be able to work out our forecast within the period contemplated, any such accident as the failure of the Financial Department to grant in any year 50 lakhs from Revenue, or the failure of either of the companies we have referred to to take up the lines indicated, will prevent the forecast being carried out for a period in excess of the six years indicated therein, and we consider this risk too serious to be passed over without being brought to your notice. On the one hand are to be considered the exigencies of our present financial and political position and the state of exchange; on the other hand, are the uncertainty above explained, and the grave importance which we attach to taking early steps to guard against famine. We would ask Your Lordship to consider, in these circumstances, whether it is more expedient to maintain the absolute limit of 350 lakhs, or so to modify it as that in any year in which, owing to the grant from revenue being deficient, it may seem necessary, we may be permitted, with Your Lordship's special sanction, to add to our registered debt such a sum as will suffice to complete the annual amount necessary for the execution of the forecast within the time contemplated.

11. We beg specially to invite Your Lordship's attention to the extreme importance, in order to the realisation of this forecast, of an early settlement with both the Bhopal and Nagpore-Bengal Companies. We have already reported, in our telegram of the 16th and Despatch No. 27 R. of the 17th instant, that we possess no funds available, compatibly with this forecast, for further advances to these lines, and rely for the execution of the forecast now submitted on the recovery of advances made already. The effect of delay in a settlement will, in the first instance, be to deprive us of at least 70½ lakhs of rupees for the prosecution of work according to the forecast in the coming year; and, in the second place (unless Your Lordship should be able to arrange independently of us for temporary advances), be to necessitate the stoppage of the works, involving considerable pecuniary loss, besides the postponement of rail-

ways which are the centre of our famine relief system. We trust that, in view of these considerations, Your Lordship will not hesitate to come to an understanding with the companies, adopting, if need be, the terms recommended in our Despatch No. 191 R. of 9th December last.

12. Two subsidiary points remain for notice.

In paragraph 4 of Your Lordship's Despatch No. 1 (Financial) of 6th January 1881 there was a threefold option as to the employment of the surplus revenue of previous years. It might be devoted (a) to Public Works, "productive" or "or unproductive," (b) to the remission or re-adjustment of taxation, or (c) to the reduction of sterling debt, or to the diminution of the amount borrowed in India for Productive Public Works. The effect of the present orders will apparently be a limitation to the first of these three methods of disposal. What was ordered in that case in respect of such surplus was that the amount "realised in any one year" might be "added in the following year to the amount borrowed." As a matter of fact, the Financial Department, so far as they have availed themselves of the discretion indicated, have hitherto resorted to the second and third option in preference to the first, and they see practical difficulties in the way of carrying out the first. On the other hand, it may be urged that there is no objection to the prompt grant of a round sum in any year as soon as the fact of a surplus in the preceding year has been definitely ascertained, provided the financial out-look for the year then current be not gravely unpromising. We shall be obliged for explanation as to the course to be adopted.

We would here observe, however, that in the event of Your Lordship thinking that the latter of the alternatives indicated in our tenth paragraph is the most to be guarded against, the question of what revenue should be considered as surplus will be of less importance to the actual progress of the works.

13. In connection with surplus revenue, we must also point out that we anticipate that it will in practice prove somewhat difficult to decide what expenditure is to be deemed "ordinary" or the "essential charges of administration," and what surplus is "available." Increases of current annual expenditure for Civil and Military establishments would evidently be comprised in the terms; but if special grants of any considerable amount for abnormal capital outlay are also included, such as for harbour defences, for instance, the latter would very seriously reduce the surplus revenue.

14. We have finally to bring another point to Your Lordship's notice. The inclusion of "arereas of previous grants" in the absolute annual limit, and the

\* Secretary of State's No. 485, December 11 1879.

Secretary of State's No. 1, January 6, 1881.

Secretary of State's No. 365, December 8, 1881.

dependance of re-grant of lapses on balances, now enjoined, apparently cancel the pre-existing orders on this subject.\* We understand Your Lordship clearly to direct that the full 350 lakhs are to be actually *put on the market*, if necessary, in order to make up the grant of that amount, or the re-grant of lapses to the Public Works Department. We are also aware that hitherto lapses have usually been re-granted. But this may not cover the whole case. It is easy to suppose occasions when the balances might be strong enough in one year to render the full loan unnecessary, and so weak in the next year as to be unable to bear the re-grant of a lapse which had occurred in the former.

We need not enlarge upon the evils attendant upon uncertainty as to re-grant of lapses, and the absolute diminution of the amount available for railway construction in the event of the withdrawal of the option, which has hitherto existed, of borrowing above the fixed limit (when otherwise unobjectionable), 1

order to compensate for times of borrowing below it. We see room for reasonable doubt whether Your Lordship, in directing this limit of borrowing to be absolute, contemplated the reversal of the previous orders in this respect, and we think it our duty to point out what may be the effect of the present restriction, so as to clear up the point and make sure that the effect was fully foreseen.

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Kutni-Umaria. Section of Etawah.	31,57,000	...	32	...	8	22	2	...	...	...	Advances probably recoverable by transfer to Companies.
Kutni-Umaria Colliery . . .	6,00,000	...	6	...	11½	11½	3½	...	...	...	...
Nagpur-Bengal . . .	...	...	...	...	16½	16½	...	...	...	...	...
Calcutta-Kalpi Section of system.	...	...	...	...	22½	22½	...	...	...	...	...
TOTAL—WORKS IN PROGRESS . .	9,51,57,000	3,60,37,596	567	...	253½	93	102½	76	41½	...	...
NOT COMMENCED.											
Hindupur Extension (Bellary-Kistna Railway). <i>Protective.</i>	70,00,000	...	70	...	...	...	...	...	40	20	The grants for these four lines in the current and coming years are for surveys only.
Kadiri Extension (Cuddapah-Nellore Railway). <i>Protective.</i>	85,00,000	...	85	...	...	...	9	80	30	15	
Damalchera Villupuram } <i>Protective.</i>	84,00,000	...	84	...	...	...	...	19	40	24	
Minor Famine lines }	90,00,000	...	90	...	...	...	...	...	40	50	
Bilaspur-Etawah . . .	...	...	...	...	1	...	11½	...	...	...	Advance probably recoverable.
Bezwa to Frontier . . .	25,60,000	...	26	...	...	...	10	16	...	...	Some change in the proportionate distribution is probable.
Warora-Chanda . . .	35,00,000	...	35	...	...	...	...	...	15	20	
Prome-Alumnyo . . .	37,60,000	...	37½	...	...	...	...	...	15	22½	
Konera-Pooree . . .	2,52,34,000	...	252	...	...	...	6½	75	80	92	
Stores and working capital . . .	70,00,000	...	70	...	5½	10½	6½	13½	18½	21	...
Total works not commenced . . .	7,49,44,000	...	740½	...	—8½	18½	29	165½	278½	264½	...
Total in progress and not commenced .	17,01,11,000	3,60,37,596	1,316½	...	250½	111½	131½	238½	320	264½	...



Forecast of Railway Construction and Outlay, 1884-85 to 1889-90—continued.

DESIGNATION OF RAILWAY.	Estimated cost.	Outlay to end of 1888-84.	Amount needed to complete on 1st April 1884.	Revised amount available in 1884-85	FUTURE WAYS AND MEANS.			PROPOSED NEW GRANTS IN LAKHS OF RUPEES.					REMARKS.
					Normal annual grant.	Other assets.	Revised 1884-85.	1886-86	1886-87	1887-88	1888-89	1889-90	
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Extra capital for open State lines .	R 2,73,00,000	R	Lakhs.	R	R	R	87	61	80	30	} 60		
Extra capital for open East Indian Railway.	1,65,00,000	...	} 52½	...	...	...	88	30	40	20			
Extra capital for open Eastern Bengal Railway.	85,00,000	.		...	...	...	13½	28	15	10			
Total "open line" capital . . .	5,23,00,000	...	522½	...	...	...	139½	119	85	6	60	60	
FRONTIER RAILWAYS.													
Sind-Pishin Railway . . . .	2,65,00,000	12,27,000	252½	...	...	...	73	105	74½	...	...	...	
Railway from Lala Musa vid Darya Khan and Muzaffargarh to Sher Shah, with branch and ferries	2,15,00,000	...	215	...	...	...	6	67	70	73	...	...	
Sutlej Bridge at Ferozepore . . .	40,00,000	...	40	...	...	...	1	12	18½	8½	...	...	
TOTAL FRONTIER COMMUNICATIONS .	5,20,00,000	12,27,000	507½	...	...	...	79	184	163½	81½	...	...	
GRAND TOTAL .	27,44,11,000	3,71,64,590	2,346½	5,01,91,000	3,80,00,000	70,00,000	467½	414½	380	380	380	324½	

No. 112 (Financial), dated 30th April 1885.

From—The Secretary of State for India,  
To—The Government of India.

I have considered in Council Your Excellency's letter, dated the 3rd of March, No. 35 (Railway), in reply to the despatch of the 27th of November 1884, No. 148 (Railway), conveying to you my decision in Council that, for the extension of railways in India, whether designed to strengthen your military position, to protect the country from the effects of famine, or to increase the facilities of commerce, the amount to be borrowed annually for public works might be enlarged from 250 to 350 lakhs; and that this was the extreme limit to which I considered it prudent to pledge the revenues of India for such purposes in any one year.

2. There has, I think, been some misapprehension on the part of your Government as to the main considerations that influenced me in adopting this decision. I did not fail to appreciate the importance of authorising as large an expenditure on the construction of railways as the financial position would justify; but I had to weigh seriously the question to what extent it was prudent to continue to incur debt year after year for this object; and, on a very careful review of the whole matter, I came to the conclusion that the limit which I have prescribed could not be safely exceeded.

3. In reply to my remark that, as the amount actually borrowed in the last five years had averaged 257 lakhs a year, the power of borrowing 350 lakhs would enable you, if you found it really necessary, to add to your funds for public works, from borrowed money, very nearly a crore of rupees in each year, you state that this calculation is inaccurate; and that, as the sums required for the East Indian and Eastern Bengal Railways were outside the 250 lakhs hitherto annually borrowed, if these sums are to be provided in future from the 350 lakhs which you are now authorised to borrow, the net sum available for construction will be very much diminished.

4. But, as my statement had in view a comparison of the actual sum borrowed in the past with that authorised for the future, it was not inaccurate. The amount borrowed during the last five years for all purposes has, on the average, been less than the amount which you are now authorised to borrow, by 93 lakhs a year; and the total amount of 2,174 lakhs, which included the extra outlay needed on the open lines, and which in that despatch I showed to be the extreme sum admissible as a charge upon borrowed funds, is very nearly met by the permission to borrow 2,100 lakhs in six years.

5. In summarising, in the 4th paragraph of your letter, the conclusions of my despatch, Your Excellency seems to have fallen into an error of some importance. The 4th clause of that summary says that "In addition to the 350 lakhs which may thus be borrowed for Public Works," I impressed on you "the necessity for regarding any available surplus of revenue over the ordinary expenditure," or "revenue available after meeting other essential charges of administration," as being primarily "applicable to meeting the exceptional charges which your Government is now called upon to bear." The reference is to the 9th and 15th paragraphs of my despatch; and Your Excellency will observe that there are no words there implying that the outlay from revenue which I was impressing on your Government was to be *in addition to* the 350 lakhs that might be borrowed. In the 9th paragraph I stated that "the frontier communications should be completed with the utmost speed consistent with economy of construction; that, as far as possible, their cost should be provided

from revenue; but that, when the revenue available after meeting other essential charges of administration is exhausted, your Government should not allow the proposed works to be retarded but should prosecute them with borrowed money." In the 15th paragraph I impressed upon you "the necessity for regarding any available surplus of revenue over the ordinary expenditure as being primarily applicable to meeting the exceptional charges" arising from the frontier railways and roads, or, in other words, for the purpose of avoiding the incurring of debt for them; and I therefore enjoined "the utmost economy" in all branches of expenditure, in order that "the unavoidable demands upon your Government for services which cannot be postponed may, when they arise, be met as far as possible from the revenues of the year, and the necessity for adding to the debt may be to the same extent avoided." The outlay from Revenue here mentioned was to be in place of, and not in addition to, any outlay that might otherwise have been provided from borrowed money. In no other sense did I suggest any interference with the discretion which the Government of India has always been at liberty to exercise, as to the amount of ordinary revenue which, on a due consideration of the various requirements of the year, it can allot for the construction of railways, in addition to the sums appropriated from borrowed money; and I do not understand how my words can have been regarded, as they seem to have been, as an instruction that any surplus revenue was to be primarily applicable for the prosecution of public works, *in addition to* the full amount that might be borrowed.

6. For the purpose of the forecast, you have assumed that there will be an annual grant of 50 lakhs from Revenue,—an arrangement to which I make no objection, provided that the revenues will admit of it; but you state that, in the event of economies being rendered imperative by unforeseen circumstances, these annual grants should, in your opinion, be considered of the nature of a preference charge in relation to other reductions. In this suggestion, which is directly opposed to the instruction contained in the 39th paragraph of my despatch of the 7th of August last, No. 237, I am quite unable to acquiesce. It can scarcely be necessary for me to remind Your Excellency that it is the duty of the Government of India to judge each year what are the branches of administration most needing attention, and in what manner the revenues can be disposed of to the best advantage; and it would be contrary, in my opinion, to sound principle, and indeed impracticable, to resolve beforehand that when a restriction of expenditure became necessary, the operations of any particular department should be entitled to special exemption from curtailment.

7. In paragraph 13 it is remarked that difficulty may be anticipated, in practice, in deciding what (to use the expressions adopted in paragraphs 15 and 9 of my despatch) should be considered "ordinary expenditure" or "essential charges of administration," and what surplus is "available;" and that you fear that the latter may be seriously reduced, both by current annual expenditure for civil and military establishments, and by abnormal capital outlay on such works as harbour defences. This opinion appears to have its origin in erroneous views such as those to which I have already adverted in this despatch, and of which I had occasion to speak in the paragraph above mentioned of my despatch of the 7th of August 1884, advocating the specific allocation of portions of the general fund available for the service of the Government to the use and control of the Public Works Department. I need only say further on this point that the Government of India, as a whole, must be the judge, from time to time, how the available funds at its disposal shall be applied, subject to the control of the Secretary of State, and with careful regard for the general

stability of your finances, the demands of no one department being allowed to have undue weight.

8. Of a similar character must be my reply to the question raised in your 12th paragraph, whether the surplus revenue actually realised in a past year is only available for the prosecution of public works, or whether it may be used for the remission or readjustment of taxation, the reduction of debt, or the diminution of the amount to be borrowed in the coming year. The question is put with special reference to the 4th paragraph of the Marquis of Hartington's despatch of the 6th of January 1881, No. 1, in which, subject to the condition that the surplus was actually realised, and was not merely estimated, the Government of India were then authorised to dispose of it in the manner that they might deem best. I see no reason to modify the instructions then given. A realised surplus represents actual cash in the balances, and your Government must determine the best method of using it in the event of the amount being in excess of current or anticipated requirements. It may be of importance to reduce the amount of the annual loan, in which case the money can be allotted to the Public Works Department as a portion of the 350 lakhs, which otherwise might be supplied by loan in any year; or it may be practicable with the money in your balances to reduce sterling debt, as was done in 1883 out of funds provided by the Protective Grant, while raising the full loan in India. Again, it may be needed for some financial reform, and not be available for Public Works; or, on the other hand, it may be practicable to make a special grant for railways, in addition to the amount otherwise provided. Of its proper disposal the Government of India must judge, on a careful consideration of all the circumstances of the time.

9. In the 8th paragraph of your letter, you give a forecast, showing the division between general and frontier railways of the amount that will be at your disposal, which, as a rule, will be 380 lakhs,—that is, I presume, 280 lakhs from borrowed money, 50 from the Protective Grant, and 50 which it is assumed that it will be practicable to allot from ordinary revenue. In this manner you consider that it will be possible to complete within six years the operations that you have in view, although any accidental failure in the arrangements may prevent this expectation from being fulfilled—a risk which you consider too serious to be passed over without notice. On this point I must observe that I am aware of no absolute necessity for executing the whole scheme within six years, if financial or other difficulties should arise. It is true that the Select Committee of the House of Commons expressed an opinion that your proposals for outlay during the next six years were moderate, and that the annual limit of borrowing previously in force might safely be enlarged. But they held that the full responsibility of deciding on the amount to be borrowed must rest with the Secretary of State in Council; and I must remind Your Excellency that the position is materially affected by the decision to construct forthwith, at a cost of some five millions, the works for improving the frontier communications, the scheme for which had not been submitted by the Government of India at the time that the Committee made its report.

10. In order to enable you to adhere as closely as possible to the forecast, you ask that lapses in one year may be again granted in the next, and that you may be permitted, in any year when the anticipated grant from revenue cannot be sanctioned, to make up the deficiency by loan. I am unable, for the reason already stated, to depart from the decision which was carefully expressed in the 10th paragraph of my despatch of the 27th of November 1884, that no larger amount than 350 lakhs must be borrowed in any one year, and that lapses can only be made good if the state of the balances admits of it.

11. You further observe, in the 6th paragraph of your letter, that you conclude that there will be no objection to the re-grant of the sums laid out on the Nagpore-Bengal Railway and the Bhopal system whenever they shall be received from the companies which it is hoped may undertake those works. If the money be subscribed in England on the terms offered, it will involve for several years the payment of 4 per cent. interest in this country, and will therefore be an expensive method of borrowing; it is therefore essential that, if in any year the companies shall be permitted to raise more than they require to spend in that year, the normal loan shall be reduced by a sum equivalent to the excess so raised. The expenditure, indeed, which will have to be incurred by the companies within the year (which will include in the first year of their formation the repayment of the amount already spent by you) is distinct from that for which you are authorised to borrow 350 lakhs. So far as it takes place in England, it will be met from the funds received from the companies; and so far as it takes place in India, the money will have to be advanced by your Government, the drawings on India being reduced to a corresponding extent.

12. Such an arrangement is, I admit, contrary to that proposed by the Government of India in regard to the Southern Mahratta Railway, in their letter of the 24th of June 1882, No. 186, and assented to in Lord Hartington's despatch of the 7th of September 1882, No. 279, under which it was intended that the sterling debt should be reduced, and the rupee debt increased, by the amount of the capital subscribed by the company. So long, however, as your Government is unable to raise in India the usual loan for public works, there is no hope of carrying this intention into effect.

13. To the extent, then, of the sums required for disbursement by the companies in excess of receipts from them in the same year, it may become necessary to borrow beyond the limit which I have laid down; and this contingency makes it of the more importance to act on my injunctions that general economy may be practised, and that, as stated at the close of the 10th paragraph of my former despatch, "no resort must be had to borrowing unless the amount cannot be provided from revenue."

14. I notice that, in your second paragraph, Your Excellency speaks of the arrangements with the two companies as being "practically concluded," and that, in the sixth paragraph, you refer to the concession to them as "imminent." I informed you, in my despatch of the 12th of March, No. 27 (Railway), of the progress of the negotiations with the promoters of those two undertakings; and I have at present nothing to add on the subject, beyond saying, as you were informed in my telegram of the 13th of March, that, in the present aspect of affairs, there is no hope of either company being able to issue their shares.

Note by His Excellency the Viceroy, dated the 22nd April 1885.

In view of the heavy expenditure already incurred by our military preparations, and of the possibility of a war with Russia, it is incumbent on the Government of India at once to take whatever measures are possible to reduce expenditure in every branch of the public service. It will also be necessary to address the Local Governments on the subject.

In order to arrive at the object we have in view as quickly as possible, I request my colleague in the Financial Department to prepare at once a note for the consideration of myself and the Council, stating what are the recommendations which he would be disposed to make in the above-mentioned direction.

Extract, paragraphs 7 to 9, of a Note by the HON. T. C. HOPE, dated 6th May 1885.

7. In considering this head it must be distinctly borne in mind that, owing to the Secretary of State's action in respect of the companies, already alluded to, and to the telegram consequently received on 14th March, it became necessary to cut about 70 lakhs out of the forecast which had been sent home with our Despatch No. 35 of 3rd March, and to reduce grants in the final Budget accordingly. Our Despatch No. 46 R. of 31st March consequently reported an allotment of only 438½ lakhs, which may be thus summarised—

	Lakhs.
A—Frontier Railways . . . . .	184½
B—Open Lines Capital . . . . .	116
C—Establishment, exclusive of A and B . . . . .	15½
D—English outlay do. do. . . . .	44½
E—Indian outlay on lines other than A and B . . . . .	77½
<b>TOTAL</b> . . . . .	<b>438½</b>

The first item cannot, of course, be touched in any way. The second underwent two revisions, in February and March, and cannot, from its nature, be got any lower. The third may admit of trifling modification by dispensing with temporary engineers, but our establishments were reduced by above half a million in 1878-79, and the Frontier Railways are a considerable drain. The items D and E are thus the only ones upon which it is possible practically to operate, and in their case action is limited by the fact that some lines have been cut down already, that much of the English stores are already contracted for, and that operations in full progress in the field cannot be suddenly suspended without considerable loss both to works and in compensation.

8. After careful examination in conference with the Secretary, Director General of Railways, and Accountant General, I find that there is a possibility of the following reductions:—

Railway.	English Outlay.	Indian outlay.	Total.
	₹	₹	₹
Cawnpore-Kalpi . . . . .	2,68,000	...	2,68,000
Jhansi-Manickpore . . . . .	6,10,000	...	6,10,000
Wardha Coal . . . . .	2,16,000	49,000	2,65,000
Kanhan Bridge . . . . .	1,25,000	...	1,25,000
Burma Railways . . . . .	50,000	1,65,000	2,15,000
Northern Bengal . . . . .	1,00,000	37,500	1,37,500
Cawnpore-Achnera . . . . .	1,00,000	44,000	1,44,000
Dacca-Mymensing . . . . .	...	1,50,000	1,50,000
Assam-Bahar . . . . .	...	5,00,000	5,00,000
Amritsar-Pathankot . . . . .	...	50,000	50,000
Rajputana-Malwa . . . . .	...	1,80,000	1,80,000
Bellary-Kistna . . . . .	12,00,000	20,00,000	32,00,000
Cuddapah-Nellore . . . . .	...	...	...
<b>TOTAL</b> . . . . .	<b>26,69,000</b>	<b>31,75,500</b>	<b>58,44,500</b>

The full realisation of the English items depends, of course, on the contracts not having been let subsequently to the latest advices. The Madras Railways being the only large item left in the Budget, the reduction necessarily falls heavily upon them, and will practically leave little beyond what is required for winding up current works and engagements. It will be understood that I do not at all concur in the prudence of stopping protective railways at a risk far outweighing,

in my opinion, the small pecuniary relief to be gained, but merely put the figures forward in loyal compliance with what is desired. Considering the present political and financial circumstances, the time does not seem to me to have arrived when such extreme measures are called for, or when it is necessary to depart from the precedent of the last Afghan war, which is described in Colonel Filgate's note of 19th March 1885, of which a copy is appended.

A. C. This has, of course, been done in accordance with my proposals of 23rd April.

9. In the event of the large reductions to which the preceding paragraph relates being decided on, and affecting the grant from revenue, I of course look to the redemption of the pledge that "in the event of economies being rendered imperative by unforeseen circumstances, they (grants to the Public Works Department) should be considered of the nature of a preference charge in their relation to other reductions." (Despatch No. 35 R. of 3rd March 1885, paragraph 7.) In any case, other departments should bear a full share of the general burden.

Note by COLONEL A. J. FILGATE, Accountant General, Public Works Department, dated 19th March 1885.

Although a general curtailment of Productive Public Works outlay was initiated in 1879, no reduction of the grants for this class of outlay was made on account of the war. Prior to 1879-80 no absolute limit for Capital outlay on Productive Public Works was fixed, but the outlay\* as a rule fell short of the grants. Early in 1879 it was decided that the outlay during 1879-80 should be curtailed and limited, and it was then ruled that the outlay during 1879-80 should be limited to £3,500,000, and that in 1880-81 and future years the limit should be £2,500,000, plus the unexpended grants of previous years.

During the Afghan war the following amounts were expended as a charge to Revenue in addition to the Railway grants under Productive Public Works:—

1878-79.	R	R
Salt Branches, Punjab Northern Railway and		
Rajputana-Malwa Railway . . . . .	11,21,010	
Frontier Railways . . . . .	29,970	
		11,50,980
1879-80.		
Salt Branches, Punjab Northern Railway and		
Rajputana-Malwa Railway . . . . .	9,79,750	
Punjab Northern Railway, Jhelum to Rawalpindi . . . . .	33,67,700	
Frontier Railways . . . . .	1,23,43,500	
		17,60,950
1880-81.		
Frontier Railways . . . . .		2,20,36,150
1881-82.		
Frontier Railways . . . . .		82,06,600
	TOTAL	4,99,84,770

Telegram, No. 803 (Financial) dated 11th May 1885.

From—Viceroy, Simla,

To—Secretary of State for India.

We can make reduction of  $58\frac{1}{2}$  lakhs under Railways and  $12\frac{1}{2}$  lakhs under Irrigation (Capital Expenditure); but of this probably 50 lakhs will be needed for increased grant during the year to Frontier Railways, and therefore cannot be made available for your Lordship's drawings. We wish to point out that this involves the withdrawal of 32 lakhs from Famine Railways in Madras; but under Your Lordship's instructions we presume that this is incumbent on us. We will telegraph again when we receive information as to amount of Provincial economies. Government of India reductions (Revenue) will not probably exceed in all £170,000.

Note by His Excellency the Viceroy, dated 25th May 1885.

Having received a private acknowledgment from the Secretary of State of our telegram, Financial, of the 11th May, in which we announced to him the proposed temporary and partial suspension of the Madras famine lines with the view of effecting a saving of 32 lakhs, and His Lordship not having made any allusion to the part of the telegram dealing with this special point, we must, I think, consider that he is not prepared to modify his previous instructions in the matter. Under these circumstances orders should be issued at once in accordance with the decision arrived at in Council in reference to the partial suspension of work upon these lines.

Extract, paragraphs 1 to 12, 15, 16, and 22, from the Despatch from the Government of India, to the Secretary of State for India,—No. 112, dated 10th July 1885 (Confidential).

We have the honour to forward, for the consideration of Her Majesty's Government, papers regarding the measures to be taken for the defence of the North-West Frontier of India. These papers comprise a report by the Defence Committee embodying their proposals on the subject, and a forwarding letter by the Commander-in-Chief, their President.

2. The proposals of the Defence Committee fall under the two heads of Communications and Defensive Works, which may conveniently be dealt with separately.

3. First, as regards Communications. The Committee point out that the greater part of the new communications necessary for the object in view have already been sanctioned by the Secretary of State for India.\* These are:—

\* Despatch No. 148 (Railway) of the 27th November 1884.

- (1) The completion of the Sind-Pishin Railway. The sanctions already given provide also for extensions from Quetta to the head of the Bolan Pass, 25 miles, and from Shebo to the foot of the Amran Range, as also for the storage of a sufficiency of permanent-way materials on the hither side of the Amran Range to admit of the extension of the railway to Kandahar should circumstances render such an operation desirable.
- (2) The construction of a broad-gauge line from Lala Musa, on the Punjab Northern Railway, to Shere Shah, opposite Multan, with a branch to the Indus, opposite Dera Ghazi Khan, and ferries over the Indus and Chenab.



- (3) The bridging of the Sutlej at Ferozepore. This bridge is to be for the broad gauge.
- (4) The construction of a road from Dera Ghazi Khan to Pishin to cover the Sind-Pishin Railway.
- (5) The construction of a road on the right bank of the Indus from Dera Ismail Khan to Kushalgarh *via* Bannu and Kohat.

These works, as has been above remarked, have already been sanctioned, and it is intended to complete them by the end of 1887-88 at a total cost which is now estimated at about six and a half millions.

4. The Defence Committee suggest the following modifications or extensions of the general project as already sanctioned.

5. In extension of the Pishin Railway, they recommend the immediate construction of a tunnel through the Amran Range, provided that an alternative surface line cannot be found, which would turn the mountains further to the south. This part of the country has not yet been thoroughly surveyed, and we have therefore made arrangements for the survey being undertaken at once. We beg to record our opinion that it is unquestionably necessary to be ready to take the railway either round or through the Amran Range, so that it may be in our power to carry out the extension of the line to Kandahar in the event of circumstances calling for such a measure. We desire, therefore, that we may receive authority to at once set about making the tunnel or the alternative line above referred to. The Amran Range once crossed, the extension of the line to Kandahar would be a work free from much engineering difficulty, which could be very rapidly executed. But the Committee estimate that the construction of a tunnel would probably occupy at least four years. It is therefore important that this should be undertaken without delay, if it is to be undertaken at all.

6. The sanction for the Sind-Pishin Railway, as we have stated, includes the branch from Quetta to the head of the Bolan Pass. But besides this a temporary line is now being constructed under Lord Kimberley's authority from Rindli upwards through the pass itself. This is being constructed, not so much with a view to its permanent utility as for immediate use in the event of war, pending the completion of the Sind-Pishin Railway *via* Harnai, to admit of supplies being pushed up rapidly and with economy through this desert tract, and also, which is a subsidiary but important object, to facilitate the supply of permanent-way material to the Pishin plateau at an earlier date than it could be carried up along the Harnai line itself. The Defence Committee recommend that this temporary line should be converted into a permanent one. We think it expedient that this measure should be adopted, provided that on further examination the project is found to be practicable within a reasonable limit of cost. In view of the extreme importance of having secure railway communication with this part of the frontier, and of the heavy gradients on the Sind-Pishin line, and its liability to damage by floods, the provision of an alternative road by the Bolan is, we think, not more than a reasonable precaution; it would give a double line through the worst parts of the country, and in case of pressure would admit of the up traffic going by one line and the down by another. The gradients on parts of both these lines being very heavy, the advantage of having double lines over the steepest parts would be that the same amount of traffic could then be carried over the steep as over the easier parts, so that the whole system as one line would be worked in the most economical manner. We may further observe that the connecting link which we now propose conditionally for sanction, from Rindli to Darwaza at the top of the Bolan Pass, is only 60 miles long,

for upwards of 50 miles of which the gradient is fairly good, the remaining mileage alone forming the difficult portion.

7. We should explain, however, that whereas the Committee speak of the conversion of the present temporary line into a permanent one, what may really be to a great extent necessary will be to construct an entirely new line on such alignment and with such embankments as experience and careful survey may show to be required for the purpose. The present temporary line is being laid down in the bed of the pass, and a large portion of it may prove to be not susceptible of conversion into a permanent line.

8. The Defence Committee further point out that the portion of the Indus Valley line between Jacobabad and Sibi needs to be improved by the provision of additional crossings. These are now being put in hand.

9. Taking the works dealt with by the Committee in geographical order, the next is the road, already sanctioned, from Dera Ghazi Khan to Pishin to cover the Sind-Pishin Railway. The report of Colonel Sandford, R.E., Deputy Quarter Master General, who was deputed to determine the alignment of this road, has lately been received, and will be shortly forwarded. He recommends that the alignment should run through the Suleiman Range by Fort Munro, through the Bori Valley, to Kot and Pishin. We have approved of his proposals, and arrangements are now being made for the immediate prosecution of the work.

10. A road already exists of a more or less perfect kind along the right bank of the Indus from Kushalgarh as far as Dera Ghazi Khan, the improvement of which will now be undertaken through the agency of the Punjab Government.

11. As regards the Lala Musa and Multan Railway, the Defence Committee recommend that the alignment should be such as to strike the Indus at Mianwali opposite Bannu, or else, if that be not approved, the provision of a branch to Mianwali. In view of the urgency of a settlement of this point, we should be glad to receive Your Lordship's sanction to our now definitively carrying out the latter alternative, as the alignment which has been found more suitable on other grounds passes through Wanbhacharan and Kandian within about 12 miles of Mianwali.

12. The Defence Committee strongly recommend the extension of the new State Railway, which has now been completed to Fazilka, down the left bank of the Sutlej to Bahawalpur. This line is, however, a narrow-gauge one, and, in forwarding their report, the Commander-in-Chief observes that it would be more equitable in his opinion to treat the cost as a charge against Reproductive Public Works. Although all railway extension in this part of the country strengthens the military position, and any line down the left bank of the Sutlej would possess strategical value in the event of invasion or for the movement of troops in case of internal disturbance, still we do not consider that a narrow-gauge line from Fazilka to Bahawalpur would be of sufficient additional value to justify its construction on purely military grounds. As regards its construction as a Productive work, we feel considerable doubts whether its probable traffic would be such as to bring it within that category. Nearly the whole of the line, however, lies within the territory of the Nawab of Bahawalpur, and it is possible that its construction may prove feasible with the aid of that Chief, and in conjunction with an extension of the broad-gauge Patiala State Railway to the westward, which has been for some time under consideration. Upon this subject we shall hereafter address Your Lordship separately in the Public Works Department.

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15. One work of communication has not been referred to by the Committee, without which the system of communications with the frontier cannot be regarded as complete. A glance at the map will show how completely the Indus Valley system of railways is separated from the other Indian railways by the Sind desert. At present troops from Bombay or the south of India going to Pishin must either travel by sea route from Bombay to Karachi, and thence up the Indus Valley, or else make a circuitous journey by Delhi and Lahore, and thence through Multan to Sukkur. We consider, therefore, that the construction of some cross line of railway connecting the Rajputana system with the Indus Valley system is much to be desired. Without expressing a definitive opinion at this stage of the case before full survey has been made, we should be disposed to give the preference to the construction of a line from Ajmere or Sambhar, through Nagore and Bikanir, to Bahawalpur. Such a line would present the advantage of some aid from the Native States traversed, and portions of it might prove fairly remunerative.

16. The very steep gradients on the Punjab Northern line between Jhelum and Rawalpindi are a great impediment to the proper working of heavy traffic. We are now considering how far it may be practicable to improve them.

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22. The extension of the railway from Peshawar to the proposed entrenched position at the mouth of the Khyber will obviously be a necessary addition to the latter work, and we would ask for formal sanction to it as part of the scheme.

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No. 264 (Financial), dated 22nd September, 1885.

From—The Government of India,  
To—The Secretary of State for India.

In our Despatch No. 234 of the 22nd August last, to Your Lordship, we explained that we had limited ourselves to the consideration of the measures necessary to strengthen our revenues in view of the proposed increase to our military expenditure. We deferred to a later period the recommendations which we have to make in regard to the steps necessary to provide funds for defensive fortifications, whether frontier or harbour, concurrently with those which are requisite for the completion of our system of Internal and of Frontier Railways. We have now the honour, in addressing Your Lordship on this subject, to bring to a close the series of administrative and financial proposals regarding the measures required to strengthen our military position, which commenced with our Despatch No. 112 of 10th July 1885.

2. The problem which we have had to consider in regard to the financial aspect of the matter has been to ascertain in what way we could most effectively and economically harmonise the conflicting claims of the several classes of works of which the construction is urgently necessary. It is desirable to review, more or less briefly, the considerations which have led us at different times to recommend the several classes of works in question.

3. A Scheme of Internal Railways was sanctioned no later than last year, of which the object is to mitigate the severity of famines. The importance of this scheme increases with the lapse of time, since with each successive year the day inevitably draws nearer when famine will recur. The project was prepared by us in pursuance of the policy recommended by the Famine Commission, and approved by this Government and by Your Lordship's predecessor. It was in

consequence of the measures recommended by this Commission that the scheme of insurance against the cost of famine which originated in 1877-78 was modified, and a sum of £500,000 was from the year 1881 annually devoted from the insurance revenues to the construction of railways. It was found necessary, however, in order to give full effect to the recommendations of the Famine Commission, that we should supplement our means by borrowing on a scale more extensive than that which had hitherto been sanctioned. The works which were undertaken for the protection of the country and for the assistance of the Government in the event of famine are still far from completion. Recognising as we do the vital importance of these works, we are of opinion that it is imperative upon us to find funds with which we may continue them, in as short a time

No. 92,	dated 22nd July	1881.
" 29,	" 23rd January	1883.
" 269,	" 24th September	"
" 27,	" 29th January	1884.
" 150 R.,	" 29th September	"
" 35 R.,	" 3rd March	1885.

as may be, to completion. In our despatches marginally noted we have expressed our deep conviction of the necessity of these railways. We have never ceased to urge the responsibility which

lies on us to complete these lines, both as the one sure means of saving life and as greatly diminishing the cost of meeting famines. The Parliamentary Railway Commission of last year summed up the situation in paragraph 17 of their Report, and the consideration to which we refer furnished evidently the main ground on which they based their decision, recommending considerable railway extension. If when famine comes it is found that we have postponed these lines indefinitely, and are unprepared with that means of defence on which we and all parties have persistently relied as the one effectual way of meeting it, we shall have much difficulty in replying to those who will hold us responsible not only for the preventible loss of life, but for the financial difficulties in which we shall be entangled. Yet we cannot but feel that there is great danger of the urgency of these works being lost sight of in the presence of the other projects with which we have been recently occupied. Apart from the consideration that the more important of the famine lines are already considerably advanced, and that wholly to discontinue them now in their present unremunerative state would be a costly and indefensible policy, the necessity for their construction is obviously in no way lessened by the need which has arisen for other classes of works. We therefore consider it essential that we should endeavour to combine the execution of this class of railways with that of the military railways, and of our proposed defence works; and that, notwithstanding the fresh obligations forced upon us, we should not allow ourselves to be deterred from the policy recommended by the Famine and the Parliamentary Commissions, and deliberately adopted by us and by Your Lordship's predecessor. From the proposals contained in this despatch, Your Lordship will see that we believe we have the means of meeting within the next five years our various requirements at a total cost but little exceeding that which is at present sanctioned for our annual capital expenditure.

4. The next portion of our scheme consists of Military Railways. We have recently explained to Your Lordship, in our Despatch No. 112 of 10th July, our views on the subject of these railways. Some of the works referred to in that despatch had been sanctioned when it was written; the remainder are as follows :—

- (a) The improvement of the gradients of the Punjab Northern Railway.
- (b) The construction of a line crossing the Amran Range to the frontier, or of a tunnel through the range.
- (c) The permanent construction of a railway in the Bolan.

(d) The construction of a line from Peshawar to the mouth of the Khyber.

(e) The construction of the British section of the Patiala and Bhawalpur line.

The necessity of these works was fully explained in the despatch of July 10th, which is at present under Your Lordship's consideration, and it seems unnecessary to repeat what was then put forward. The projected construction of the Ajmere-Bhawalpur line, or of some other line to connect the Rajputana with the Indus Valley system, and the possible extension at a future time of the Pishin Railway to Kandahar, were also mentioned in that despatch as works of which the construction may have to be eventually undertaken.

5. Finally, we have before us, as yet only partially sanctioned, a scheme of Frontier and Coast Defences. This scheme also has been fully reported upon in our despatch of July 10th, and the urgency of the several works of which it is composed has been explained.

6. We will next gather up into a single statement the several groups composing the combined scheme of works to be executed by State Agency, exhibiting in each group the projects of which it is composed, and the total cost remaining to be met from the commencement of 1886-87:—

Designation of Railway.		Expenditure in lakhs remaining after commencement of 1886-87.
<b>INTERNAL RAILWAYS.</b>		
<b>GROUP A.—PROTECTIVE LINES IN PROGRESS.</b>		
PROTECTIVE LINES IN PROGRESS.	Katni-Umaria Section of Bilaspur-Etawah.	7
	Katni-Umaria Colliery . . . .	3
	Bellary-Kistna . . . .	120½
	Cuddapah-Nellore . . . .	23½
	Assam-Bihar. { 1. Muzaftarpur-Hajipur . . . .	106
	2. Sonapur-Hajipur . . . .	
	3. Jhinjarpur-Dinajpur . . . .	
	4. Munihari-Branch . . . .	
Total of Group A—Protective Lines in progress .		265½
<b>GROUP B.—PROTECTIVE LINES NOT COMMENCED.</b>		
PROTECTIVE LINES NOT COMMENCED.	Hindupur Extension (Bellary-Kistna Railway).	70
	Kadiri Extension (Cuddapah-Nellore Railway).	35
	Damalchera-Villupuram . . . .	84
	Minor Famine Lines . . . .	90
	Kontera-Pooree . . . .	252
	Kaunia-Dhubri (Assam-Bihar Railway).	64
Total of Group B—Protective Lines not commenced .		645
<b>GROUP C.—LINES UNDER AGREEMENT.</b>		
LINES UNDER AGREEMENT .	Bezwarra to Frontier . . . .	26
	Warora-Chanda . . . .	35
Total of Group C—Lines under Agreement .		61
Carried over .		971½

Designation of Railway.		Expenditure in lakhs remaining after com- mencement of 1886-87.
Brought forward .		971½
MILITARY RAILWAYS.		
GROUP D.—FRONTIER LINES IN PROGRESS.		
FRONTIER LINES IN PROGRESS.	{ Sind-Pishin . . . . .	46½
	{ Sind-Sagar . . . . .	172½
	{ Sutlej Bridge, Ferozepore . . . . .	27
	{ Bolan Railway, temporary . . . . .	Nil
	{ Darwaza-Quetta Extension . . . . .	Nil
	{ Khwaja-Amran do. . . . .	20
	{ Kandahar Reserve, permanent-way . . . . .	10
	{ Rukh-Rindli line, improvements . . . . .	Nil
	{ Reserve Locomotives . . . . .	14
Total of Group D.—Frontier Lines in progress .		289½
GROUP E.—FRONTIER LINES PROPOSED, NOT YET SANCTIONED.		
FRONTIER LINES PROPOSED.	{ Punjab Northern, gradients improvements . . . . .	10
	{ Bolan Railway, making permanent . . . . .	80
	{ Crossing Amran to Frontier . . . . .	50
	{ Peshawar to mouth of Khyber . . . . .	12
	{ Patiala-Bhawalpur, British Section . . . . .	50
Total of Group E.—Frontier Lines proposed, not yet sanctioned .		202
GROUP F.—FRONTIER AND COAST DEFENCES.		
	Frontier Defences . . . . .	155
	Coast do. . . . .	42½
Total of Group F.—Frontier and Coast Defences .		197½
GROUP G.—		
	Stores and Working Capital . . . . .	75
	Open Line Capital . . . . .	410
GRAND TOTAL .		2,145½

7. Apart from the above works to be directly executed by the State, however, there remain the important projects of the Nagpur-Bengal Railway and the Bilaspur-Etawah from Umaria to Bilaspur, both of which we have proposed to Your Lordship's predecessor to make over to companies. Our liability during the next five years in regard to these railways is restricted to the finding of the net interest on the capital expended, a forecast of which was submitted by us in paragraph 35 of our Despatch No. 29 of 23rd January 1883, and again in the third enclosure of our Railway Despatch No. 150, dated 29th September 1884. The necessity for the construction of these railways, and especially of the former, has been insisted upon by us in successive despatches. The Nagpur-Bengal Railway is the backbone of our whole protective system, as it taps the country which produces the largest and the most reliable surplus of grain in India, is centrally situated, and, when the system is complete, will be connected by radiating lines with every province of India. The construction of this line is essential to the scheme of famine protection. Similarly, the completion of the Katni-Umaria-Bilaspur section of the Etawah-Bilaspur line, and its connec-

tion with Raipur, is necessary to the utilisation of the Indian Midland as a Famine Railway. We trust, therefore, that Your Lordship will facilitate, as far as may be possible, the early launching of these railways by companies. The important results, both commercially and in regard to protection against famine, which this would secure have already been explained. We may add that we shall thus also obtain a refund of 85 lakhs from the former and of 37½ lakhs from the latter of these lines.

8. Before we proceed to explain our recommendations in regard to the mode of meeting the expenditure on the State lines, we desire to urge upon Your Lordship a reconsideration of the decision by which the capitalisation of any part of the Famine Fund was negatived. We are aware that the Parliamentary Commission disapproved last year of the employment of any part of the Famine Fund for the purpose of providing interest on the capital expended by companies during construction; but since their report was presented circumstances have greatly changed. Much additional expenditure has been forced upon us, imposing a considerable burden on our revenues, in the form of interest on loans. We have further been obliged to recommend a very onerous increase to our normal military expenditure. It is necessary, if the equilibrium of our budget is to be maintained, that we should utilise all the resources at our command in the manner most suited to meet our increased requirements. It would, on the other hand, so far as we can at present see, be impossible that, with so many additional burdens thrown upon us, we should undertake to meet, from our ordinary revenue, the charge for interest on the lines to be made over to companies. But the necessity for those lines, in order to complete our Famine System, remains, as we have shown, unchanged. We think that these considerations justify us in again soliciting Your Lordship to sanction our capitalising, during the next five years, so much of the Railway share of the Protective Famine grant as is necessary to meet the interest on the lines conceded, or to be conceded, to companies. As this, however, reduces the sum annually available for construction of railways, we propose temporarily to devote to railway construction from the capital grant for Irrigation a sum equivalent to that which is required to meet the interest on lines conceded to companies, so that our annual resources available for the purpose will continue, as at present, to be 280 lakhs, plus 50, or 330.

In the event, however, of Your Lordship continuing unwilling to sanction the capitalisation of the Famine grant, even to the limited extent proposed, we beg to recommend, as an alternative, that the net interest charge on the lines conceded to companies be met out of the sum we at present propose, in accordance with paragraph 7 of Lord Kimberley's Railway Despatch No. 148, dated

\* Foreign Despatch No. 25 (Secret), dated 22nd September 1884, paragraphs 5 and 8 (a).  
Military Despatch No. 112, dated 10th July 1885, paragraphs 9, 10, 13, and 14.

27th November 1884, to devote out of revenue to the completion of the Frontier Military Roads.\* The roads might be, to that extent, provided for out of

the normal annual grant of 350 lakhs, an equivalent amount out of the Irrigation share of that grant being annually applied to Railways, as in the capitalisation proposal.

9. With these remarks, we proceed to explain in what manner we propose

to arrange for the funds necessary for the construction of the several works indicated in paragraph 5. The funds actually at our disposal for railway construction we take at 280, plus 50, or

Railway Despatch No. 97, dated 17th July 1885 (Assam-Bihar Railway).

Railway Despatches, No. 132, dated 18th August 1883; No. 17, dated 26th July 1884; No. 191, dated 9th December 1884; No. 77, dated 12th June 1885 (Assam-Bihar Railway).

Railway Despatch No. 83, dated 2nd June 1883, *et seq.* (Katni-Bilaspur Railway).  
Telegram dated 17th July 1885 (Sindia Railway).

Foreign Despatch No. 130, dated 24th July 1885 (Mysore Railway); Secret.

330 lakhs. But, in the communications marginally noted, and elsewhere, we have pressed upon Your Lordship the expediency of negotiating with companies for the transfer of the Assam-Bihar, the Nagpur-Bengal, the Katni-Bilaspur, Sindia, and the Mysore Railways. Should these transfers be arranged, as we earnestly trust that at the earliest possible date they may be, the following refunds will approximately be available:—

	Lakhs.
Assam-Bihar (including Tirhoot lines) . . . . .	253
Nagpur-Bengal . . . . .	85
Katni-Bilaspur . . . . .	37½
Sindia Railway . . . . .	95
Mysore Railway . . . . .	64
Or a total of . . . . .	<u>534½</u>

To these may be added the 60 lakhs to be repaid us by the Indian Midland Railway Company, making a total contemplated refund of 594½ lakhs.

10. We shall thus have a total of  $330 \times 5 = 1,650$ , plus 594½, or 2,244½ lakhs, against a total estimated expenditure of 2,145¼, or 99¼ lakhs in excess of what is required to work the whole scheme. But we have entered 170 lakhs for the construction by the State, during the above term, of the remainder of the Assam-Bihar Railway. Should the line be conceded to a company, as we strongly recommend, we shall be relieved of this sum, and may look for a refund of the 253 lakhs already spent; so that the total surplus on the whole account would be not less than 269½ lakhs.

11. We propose to give the prior claim on our funds to the lines in Groups A, C, and D, to so much of Group E as concerns the Punjab Northern gradients and the Amran Range project, and to Group F, with the exception of 17 lakhs on account of certain works at Sukkur, Bahawalpur. and Multan, which our Military colleagues consider can be left over to later years. To the above works, as of course to Group G [the open line expenditure and to the expenditure on account of stores and working capital], we desire to assign priority in the distribution of the regular annual grant of 330. We propose also to allot to certain projects in Groups A and D, in addition to the existing grants, the refund of 60 lakhs from the Indian Midland Railway, which we hope to receive this year. We have calculated the grants in the first appendix to our despatch on this basis.

12. It is desirable to add a few words to show why we have given priority to the railways comprised in the several groups indicated in the last paragraph. On the Bellary-Kistna line, some 70½ lakhs will have already been spent by the end of this year, and it will still require 120¼ lakhs more to be spent before it can either be utilised for famine protection or earn any interest on the outlay. We need not remind Your Lordship of the excessive liability to famine of the tract which this line is designed to protect. Its annual rainfall is always small and to a marked degree precarious. It suffered pre-eminently in 1877, and is from the latest accounts in imminent danger of a similar visitation this year. The Madras Government, telegraphing on the 10th instant, report the condition of the ryots in Bellary as very critical, and add that if early amendment is not reported, it will be necessary to reopen work on the Hindupur Extension Railway to provide means of subsistence for them. For this line the grant in the present year was originally 50 lakhs, reduced afterwards to 40 and then to 22



lakhs. This reduction, however indispensable, has postponed the opening for a year of the first section of 90 miles which was almost ready, and would have been invaluable from a famine point of view, involving not only loss of revenue on that section, but further postponing for at least a similar period the completion of the entire line, and the through traffic that might be expected, and leaving all the money hitherto spent *pro tanto* unproductive.

Similar remarks apply, though in a lesser degree, to the Cuddapah-Nellore line, on which 28 lakhs will have been spent by the end of this year, requiring at least a similar amount to complete it.

On the Assam-Bihar line 77 lakhs will have been spent by the end of this year, but it will remain to a great extent unproductive, and, in case of famine, useless, till funds can be supplied to fill in the broken links. By completing the Gundak bridge and extending from Jhijnarpur to the Kosi the western branch of this line might be made complete in itself, and would be both useful and remunerative. A separate eastern branch, not connected with the western, but still protective and remunerative, might be provided by completing the branch from the Ganges to Furruckabad and thence to Dinajpur and the Northern Bengal system. The whole Assam-Bihar project, however, cannot attain its proper measure of development until the link between Kaunia and Dhubri on the Brahmaputra has been completed also.

With regard to the lines entered in Group B, it is sufficient to refer Your Lordship to paragraph 14 of our Despatch No. 27 of 29th January 1884 for those lines that belong to the Madras Presidency, and to paragraph 7 of our Despatch No. 150 R. of 29th September 1884, regarding the Kontera-Pooree line. The Madras Government began operations, as a relief work, on the Hindupur Extension in January last, and are now, as above explained, proposing to go on with it for the same purpose. All this group of famine lines are of immense importance for the protection of districts of the Madras Presidency which suffered so severely in 1877, and though we postpone them in favour of the lines which have been already begun, we think it of great importance that they should as soon as possible be completed.

The works in Groups D and F have formed so recently the subject of communication to Your Lordship that we think it unnecessary to do more at present than refer to our despatch of July 10th, to which was appended the Report of the Commission appointed to examine into the matter, and in which our own conclusions were carefully summed up. The annual grants for the railways in Group D and the defence works in Group F have been entered in the first appendix to this despatch in accordance with the recommendation of His Excellency the Commander-in-Chief, and of our honourable Military colleagues, arrived at in view of their relative urgency. An extract from the papers containing their recommendations will be found in the second appendix to this despatch.

13. Your Lordship will observe that, except in the year 1886-87, the total annual expenditure will in no case exceed the sanctioned limit of 330 lakhs. The gross amount shown against 1886-87 is 500½ lakhs, or 170½ lakhs in excess of the normal grant. But of this sum 61 lakhs is to be expended on replacing rails for the Kandahar lines already ordered but which we desire to divert to the prosecution this year of the Sind-Sagar Railway and for the supply of further materials urgently needed for that line; and this expenditure we propose to make contingent on the refund next year of 64 lakhs which we anticipate on account of Mysore Railway or on any other refund which may first accrue. The net excess is therefore an additional expenditure of 109½ lakhs only, over the whole term of five years, and for the construction of the entire system of works. This excess, moreover, is attributable solely to the cost of Frontier and Coast Defence works, amounting

to 197½ lakhs, being debited to the normal grant of borrowed money, which has hitherto not been available for such objects, but reserved for railways and irrigation alone.

14. Your Lordship will observe that certain lines in Group E, while entered in paragraph 6 of this despatch, have no allotments assigned to them in the scheduled forecast of Appendix I. The reason is that these lines must await for the present the result of the enquiries and estimates in progress concerning them, as well as the completion of the transfers to companies which we contemplate the lines are as follows:—

	Lakhs.
Bolan Railway, making permanent . . . . .	80
Line from Peshawar to the mouth of the Khyber . . . . .	12
Patiala-Bahawalpur, British Section . . . . .	50
<b>TOTAL</b> . . . . .	<b>142</b>

Should the arrangements for the transfer of the lines indicated in paragraph 9 be carried out, it will, in our opinion, be most desirable that the proceeds of all refunds accruing after the first (which will be allotted as proposed in paragraph 13) should be held primarily available for the completion of the lines in Group B and Group E, in such proportions as may appear at the time to be most convenient. The sooner the railways in Group B are completed, the sooner will the objects of the Famine Fund have been fulfilled, and the sooner will the fund itself revert to our disposal; while the security given to the country will be an all-important insurance to us in respect of expenditure on the next occurrence of famine.

15. Our conclusions, finally, on the whole matter may be briefly stated as follows:—

- (i) It is essential that the important Famine Protective Railways should be carried on at a fair speed, irrespective of the additional demands that have been thrown on our finances by the necessity of constructing additional Frontier Railways and Frontier and Coast Defences. With a view of obtaining this end, we propose to utilise the present Railway grant of 280 lakhs of borrowed money and 50 lakhs of the Famine Insurance grant for the prosecution of Famine Protective Railways, Frontier Railways, and Frontier and Coast Defences, until these works are completed.
- (ii) We propose to supplement the existing grants for outlay on the above objects this year by 60 lakhs from the refund anticipated from the Indian Midland Railway Company. This additional grant will be utilised somewhat as under:—

	Lakhs.
Sind-Sagar Railway . . . . .	25
Bellary-Kistna Railway . . . . .	15
Cuddapah-Nellore Railway . . . . .	} 20
Assam-Bihar Railway . . . . .	
<b>TOTAL</b> . . . . .	<b>60</b>

- (iii) In the year 1886-87 we consider that the fixed grant of borrowed money of 350 lakhs should be increased for this year only by 109½, and that a further sum of 61 lakhs from the refund anticipated on account of the Mysore Railway, or such other refund that may be

first secured, should be added to the grant made to the Sind-Sagar Railway to allow of the purchase of materials urgently needed. On this being determined, we intend to utilise a portion of the materials under supply for the Kandahar Reserve on the Sind-Sagar Railway, and to replace them next year out of the special grant of 61 lakhs above alluded to.

- (iv) We propose that subsequent to 1886-87 the normal rate of borrowing should be reverted to, but that the balance of the refunds anticipated from Companies alluded to in paragraph 9 should be made available for prosecuting the railways in Groups B and E, as may be found most advantageous.
- (v) We desire that a portion of the Famine Insurance grant should be temporarily diverted to the payment of the interest on the Capital of the following Railways:—

Indian-Midland,       |       Bengal-Nagpur,  
Bilaspur-Katni;

the funds needed for this purpose to be obtained by reducing the Capital outlay on Irrigation works; or if this procedure should not be approved, that the cost of the Frontier Military Roads should be made a charge against the fixed grant of 350 lakhs of borrowed money, the proportion of this grant now allotted for outlay on Irrigation works being reduced *pro tanto*, and the net charge for interest on the Capital of the Companies met from Reserve in ordinary course.

- (vi) We are strongly of opinion that endeavours should be made to launch the Bengal-Nagpur Railway Company at the earliest possible date, and that the construction of the Bilaspur-Katni Railway be made over, as soon as this can be arranged on similar terms, to that Company, or to a new Company, with the option of taking over the Umria-Katni Railway within a fixed period.
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## APPENDIX I.

# FORECASTS OF RAILWAY AND MILITARY DEFENCES, CONSTRUCTION AND OUTLAY, 1884-85 TO 1890-91.

*C.—Budget grants, 1885-86. E.—Modified grants, August 1885.*

DESIGNATION OF RAILWAY.	Estimated cost by latest information.	Outlay to end of 1895-96.	Amount needed to complete on last April 1894.	ACTUALS.		GRANTS.	PROPOSED NEW GRANTS IN LAKHS OF RUPEES.					REMARKS.
				1894-95.	1895-96.		1897-98.	1898-89.	1899-90.	1900-91.		
1	2	3	4	5	6	7	8	9	10	11		
FRONTIER LINES IN PROGRESS.												
Sind-Pishin . . . . .	2,05,00,000	12,23,000	252½	66,91,000	139½	46½	{	...	...	...	Excess not improvable. It is proposed to appropriate 60 lakhs of the Indian Midland Railway refund this year as under:	
Sind-Sagar . . . . .	2,30,00,000	...	230	4,22,000	53½	45	7	...	...	...	Lakhs.	
Sutlej Bridge, Ferozepore . . . . .	40,00,000	...	40	1,07,000	12	20	...	...	...	...	Sind-Sagar Railway 25	
Bolan Railway, temporary . . . . .	20,00,000	...	20	...	20	...	...	...	...	...	Bellary-Kistna Railway 15	
Darwaza-Quetta Extension . . . . .	23,00,000	...	23	...	23	...	...	...	...	...	Cuddapah-Nellore Railway 10	
Khwaja-Amran Extension . . . . .	20,00,000	...	20	...	...	...	...	...	...	...	Assam-Belhar Railway 10	
Kandahar Reserve, permanent way . . . . .	61,50,000	...	61½	...	51½	10	...	...	...	...	TOTAL 60	
Rukh-Rundi line, improvements . . . . .	2,00,000	...	2	...	2	...	...	...	...	...	These grants are marked + in the column "Grants, 1895-96."	
Reserve Locomotives . . . . .	14,00,000	...	14	...	...	14	...	...	...	...		
Total Frontier Lines in progress . . . . .	.....	.....	663½	72,20,000	926½	216½	46½	...	...	...		
FRONTIER LINES PROPOSED.												
Punjab Northern, gradients improvements . . . . .	10,00,000	...	10	...	...	10	...	...	...	...		
Crossing Amran to Frontier . . . . .	50,00,000	...	50	...	...	15	35	...	...	...		

Forecasts of Railway and Military Defences, Construction and Outlay, 1884-85 to 1890-91—continued.

DESIGNATION OF RAILWAY.	Estimated cost by latest information.	Outlay to end of 1883-84.	Amount needed to complete on 1st April 1884.	ACTUALS. 1884-85.	GRANTS. 1885-86.	PROPOSED NEW GRANTS IN LAKHS OF RUPEES.					REMARKS.
						1886-87.	1887-88.	1888-89.	1889-90.	1890-91.	
1	2	3	4	5	6	7	8	9	10	11	Any of these lines which may be sanctioned hereafter will be provided for, proportionately with the Madras Protective Railways mentioned below, from any refunds which may accrue after replacing the Kandahar Reserve material.
Bolan Railway, making permanent . . . . .	R 80,00,000	R ...	Lakhs. 80	R ...	Lakhs. ...	...	...	...	...	...	
Peshawar to mouth of Khyber . . . . .	12,00,000	...	12	...	...	...	...	...	...	...	
Patiala-Bhawalpore, British section . . . . .	50,00,000	...	50	...	...	...	...	...	...	...	
Total Frontier Lines proposed . . . . .	.....	...	202	...	...	25	35	...	...	...	
PROTECTIVE LINES IN PROGRESS.											
Katni-Umaria Section of Bilaspur-Etah . . . . .	37,57,000	...	37½	9½	C. 21	7	...	...	...	...	The extra grants in 1885-86 to be provided out of the Indian Midland Fund—vide note above.
Katni-Umaria Colliery . . . . .	6,00,000	...	6	1	E. 2	3	...	...	...	...	
Bellary-Kistna . . . . .	1,91,50,000	9,32,027	182	35½	{ +15 E. 28 +10 E. 11	50	41½	14	...	...	
Cuddapah-Nellore . . . . .	56,50,000	2,73,146	53½	14½	{ +10 E. 20	18½	...	...	...	...	
Assam— 1. Muzaffarpur-Hajipur 2. Sonepur-Hajipur 3. Jhinjapur-Dinalpur 4. Munthari Branch 5. Kaunia-Dhubri . . . . .	22,00,000 14,20,000 1,46,50,000 64,00,000	18,28,897 2,73,146 6,49,189 ...	4 155½ 64	33½ ... ...	... { +10 E. 20 ... ...	... 7 ... ...	... 18½ ... ...	... 60 ... 20	10½ 30 ...	... 14 ...	
Total Protective Lines in progress . . . . .	.....	...	502½	93½	115	85½	60½	94	40½	14	



*Forecasts of Railway and Military Defences, Construction and Outlay, 1884-85 to 1890-91—concluded.*

DESIGNATION OF RAILWAY.	Estimated cost by latest information.	Outlay to end of 1883-84.	Amount needed to complete on 1st April 1884.	ACTUALS. 1884-85.	GRANTS. 1885-86.	PROPOSED NEW GRANTS IN LAKHS OF RUPEES.				REMARKS.
						1886-87.	1887-88.	1888-89.	1889-90.	
1	2	3	4	5	6	7	8	9	10	11
Stores and Working Capital . . . . .	R	R	Lakhs.	R	Lakhs.	...	10	15	20	20
Total—Railways . . . . .	.....	...	...	...	...	446½	269½	274	325	287
Frontier and Coast Defences . . . . .	...	...	...	...	...	54	60½	56	5	5
GRAND TOTAL . . . . .	.....	..	...	...	...	500½	330	330	330	902
Comparison with normal grant of 280 + 50 = 330 lakhs . . . . .	.....	...	...	...	...	+170½	...	...	...	-28

In 1886-87, 61 lakhs to be provided from the Mysore or other refund next accruing, leaving 109½ to be met from loan funds.

Extract, paragraphs 46 and 51 to 54, from the Despatch from the Secretary of State for India, to the Government of India,—No. 239 (Financial), dated 27th August 1885.

46. From this review of the present financial position, it is apparent that the estimates for the current year showed a bare equilibrium, and that this has already been converted into a serious deficit, while it will certainly be necessary in the ensuing year to provide for a material increase in the regular expenditure on the Army, as well as further outlay on frontier defences and probably a larger charge under Exchange. I trust, therefore, that Your Excellency will forthwith take into your serious consideration the measures which you may deem most suitable for adoption, with a view to meeting the present and prospective state of the finances. Some improvement may, perhaps, be anticipated in the Revenue by larger sales of opium, as the reserve will have been greatly strengthened in consequence of the abundance of the last two crops. But, unless you are prepared to take other measures to enlarge the Revenue, it will, in my opinion, be essential to consider whether, apart from other possible economies, the outlay on Public Works, other than those required for the defence of the frontier, is not greater than your financial condition will permit. The following amounts are given in the Estimates as intended to be spent on the construction of State Railways (including the East Indian and Eastern Bengal lines) and Irrigation Works during the last and current years, irrespective of the sums that are being expended by the various Railway Companies, and in addition to the outlay on Civil Buildings and Roads, to which I shall refer hereafter—

	1884-85.	1885-86.
	£	£
From borrowed Money—		
Railways . . . . .	3,681,990	3,382,700
Irrigation Works . . . . .	760,356	819,700
	<u>4,442,346</u>	<u>4,202,400</u>
From Revenue—		
Railways: Protective . . . . .	898,100	500,000
Frontier . . . . .	140,015	500,000
Other Lines . . . . .	191,100	398,000
Irrigation: Protective . . . . .	270,600	287,300
Other Works: say . . . . .	200,000	200,000
	<u>1,699,815</u>	<u>1,885,300</u>
TOTAL . . . . .	<u>6,142,161</u>	<u>6,087,700</u>

\* \* \* \* \*

51. It is, in my opinion, most important that the Provincial Governments should not be allowed to overdraw their balances. The arrangements made in 1882 required that they should not look to the Imperial Government for assistance until the whole of their resources are exhausted; and, if they are permitted to draw their balances below the required minimum, it is evident that they will not be in a condition to meet a sudden demand, as was intended. The actual circumstances of the present time indicate that those arrangements were more liberal than a prudent policy should have contemplated as likely to be maintained without interruption; and I am of opinion that your Government should consult with the Provincial Governments as to whether the financial pressure which has



arisen ought not to be borne in part by the Provincial resources, and whether the reduction of the outlay of 610,400*l.* which you have been able to ensure ought not to be regarded as a contribution towards the present extraordinary demands which cannot be added to Provincial balances available for expenditure in future years, and which will consequently go towards the reduction of the year's deficit.

52. I desire to express my hearty approval of the measures taken by you, and by the Local Governments acting in accordance with your Resolution of the 29th of April, to effect without loss of time all possible economy in the ordinary expenditure which had been contemplated and sanctioned. Greatly as I regret the necessity which has arisen for enforcing a reduction of a rate of outlay which under more favourable circumstances would have been unexceptionable, I feel convinced that the Local Governments will be the first to recognise the duty of co-operating in the retrenchment necessary for a re-establishment of the equilibrium of the general finances.

53. In another respect I think that some relief may be obtained, as a temporary measure. The main object of the scheme for Famine Insurance was to provide the means of reducing the Debt, in prosperous times, at the rate of 15,000,000*l.* in ten years; so that, if that sum should have to be borrowed during the decade for the purpose of relieving distress, the aggregate amount of the Debt would at the end of the time not have been increased in consequence

* Total Debt, 31st March 1875	£ 118,416,991
Capital outlay at that date	16,223,058
Difference, being Ordinary portion of Debt	102,223,933
Total Debt, 31st March 1885	162,454,748
Capital outlay to 31st March 1884	68,505,623
Add outlay in 1884-85	6,732,400
	<u>74,238,023</u>
Difference, being Ordinary portion of Debt	88,216,725
Reduction in ten years	<u>14,007,268</u>

of Famine Relief. I find that between the 1st of April 1875 and the 31st of March 1885 the Ordinary Debt has been reduced, by discharge or by transfers to the Productive Works portion of the Debt, by about 14,000,000*l.*\* At the same time the net charge for the Railways and Irrigation Works, including the interest on the portion of the debt charged against those works, as well as the charge on account of exchange, has

been reduced from 2,068,000*l.* in 1874-75 to 1,100,000*l.* in 1884-85. Therefore the object of the Famine Insurance arrangement has in fact been attained, though no doubt not wholly through the operation of the measures directly taken for that object. In this view of the matter, and in consideration of the urgent necessity that has arisen for incurring a large outlay for the protection of the frontier, which at present is more pressing than that for making further provision against famine, it appears to me that, subject to meeting the actual cost of famine relief, the arrangement for making a yearly grant of 1½ millions as Famine Insurance may for the present be suspended, and the money thereby set free be made available for meeting the additional charges that have now arisen. I am hardly able to see how, without some such temporary diversion of the grant, the imposition of considerable fresh taxation can be avoided.

54. Experience, in my opinion, fairly justifies the anticipation that, if a strict watch is maintained in preventing the growth of charges for administration and ordinary Public Works for a comparatively short term of years, the natural expansion of the revenues will supply the means of meeting all increases of expenditure properly chargeable on the annual income, that are likely to be required in the immediate future, of maintaining a sufficient surplus to restore the annual provision for insurance against famine, and to guarantee the general financial position. I greatly regret the necessity of interrupting for a time the

operation of a system so essential to the security of the finances as that which has been successfully established for meeting the liabilities arising from drought and famine. I recognise the duty of the Government to provide for those liabilities among the ordinary charges of the year; but, under present circumstances, it is wiser to make some temporary, and I hope not serious, sacrifice of future advantage, than to resort to the extreme measure of replacing any of those burdens on the people which were so lately removed.

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No. 1237 (Financial), dated 27th August 1885.

From—The Secretary of State for India,  
To—The Government of India.

In your Excellency's letter, dated the 21st of April, No. 106, reference was made to instructions which you anticipate, in respect to the changes in the form of general account in connection with the new Railway policy.

2. In the second paragraph of my Despatch of the 27th of August, No. 239, I have alluded to the substitution of the title "Capital Expenditure on Railways and Irrigation Works not charged against Revenue" for that of "Expenditure on Productive Public Works (Capital Account)."

3. It will, however, I think, be necessary to make some changes in other parts of the Accounts. The Earl of Kimberley's Despatch, dated the 14th of August 1884, No. 89 (Railway), informed your Government that he concurred in the general recommendations of the Select Committee of the House of Commons on Railway Communications in India, of which one was that the rigid technical distinction between productive and protective lines could not be maintained; and another was that the principle of raising funds only in India for Public Works should be abandoned, and that money required for schemes that had received the approval of the Secretary of State in Council should be borrowed in England when circumstances seemed to render that course desirable.

4. Such a decision makes it no longer necessary, if indeed it would be practicable, to retain, in the main Accounts of Revenue and Expenditure, separate groups showing the financial result of the works technically admitted as productive, and the receipts and charges attributable to works not admitted into that class. It will, in my opinion, be better to have one group for the charges on account of railways, another for irrigation, and a third for military and civil buildings and roads.

5. Further, I deem it desirable that the capital outlay on railways and irrigation works, even when chargeable against revenue, should be clearly distinguished from the expenditure comprised in the working expenses, interest, and similar charges. The amount allotted to Protective Works from the grant for Famine Relief and Insurance will continue to be shown as at present; and the further capital outlay may be arranged in a separate group.

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No. 275, dated 6th October 1885.

From—The Government of India,

To—The Secretary of State for India.

We have had the honour to receive Your Lordship's Financial Despatch No. 239, dated the 27th August. We propose hereafter to reply to so much as may in ordinary course require explanation from us, but we observe that towards its close the despatch deals with important questions of finance, the decision in regard to which must determine the policy to be adopted in respect to the construction of the railway and other works which form the subject of our Despatch No. 264 of the 22nd September. We think it, therefore, desirable to dispose at once of this part of the subject, in order that, when taking into consideration our communication of the 22nd September, Your Lordship may have before you our views upon the whole matter.

2. Your Lordship observes, in the 46th paragraph of the despatch, that, from a review of the present financial position, it is apparent that the estimates for the current year show a bare equilibrium; that this has already been converted into a serious deficit; and that it will certainly be necessary in the ensuing year to provide for a material increase in the regular expenditure on the Army, as well as for further outlay on frontier defences, and probably for a larger charge under Exchange. Your Lordship desires us to take forthwith into our serious consideration the measures which we may deem most suitable for adoption, with a view to meeting the present and prospective state of the finances. It is pointed out that, after making allowance for larger sales of opium, it will be essential, unless we are prepared to take other measures to enlarge the revenue, to consider whether, apart from other possible economies, the outlay on Public Works, other than those required for the defence of the frontier, is not greater than our financial position will permit. Your Lordship further desires, in the 51st paragraph of your despatch, that we should consult with the Provincial Governments as to whether the financial pressure which has arisen ought not to be borne in part by them, and whether the reduction of the outlay of £610,400, which we have been able to ensure, ought not to be regarded as a contribution towards the present extraordinary demands, which cannot be added to Provincial balances available for expenditure in future years, and which will consequently go towards the reduction of the year's deficit. Your Lordship adds,—

“Greatly as I regret the necessity which has arisen for enforcing a reduction of a rate of outlay which, under more favourable circumstances, would have been unexceptionable, I feel convinced that the Local Governments will be the first to recognise the duty of co-operating in the retrenchment necessary for a re-establishment of the equilibrium of the general finances.”

Finally, in the 53rd and 54th paragraphs of the despatch, Your Lordship observes that the main object of the scheme for famine insurance was to provide means for reducing the Debt in prosperous times, at the rate of fifteen millions in ten years, so that if that sum should have to be borrowed during the decade for the purpose of relieving distress, the aggregate amount of the Debt would at the end of the time not have been increased in consequence of famine relief. Your Lordship quotes certain figures to show that the object of the Famine Insurance arrangement had, in fact been attained, though not wholly through the operation of the measures directly taken for that object. In this view of the matter, and in consideration of the urgent necessity that has arisen for incurring a large outlay for the protection of the frontier, which

at present is more pressing than that for making further provision against famine, it appears to Your Lordship that, subject to meeting the annual cost of famine relief, the arrangement for making a yearly grant of one and a half millions as famine insurance may for the present be suspended, and the money thereby set free be made available for meeting the additional charges that have now arisen. Your Lordship concludes,—

“I greatly regret the necessity for interrupting for a time the operation of a system so essential to the security of the finances as that which has been successfully established for meeting the liabilities arising from drought and famine. I recognise the duty of the Government to provide for these liabilities among the ordinary charges of the year; but under present circumstances it is wiser to make some temporary and, I hope, not serious sacrifice of future advantage, than to resort to the extreme measure of replacing any of those burdens on the people which were so lately removed.”

3. The proposals contained in the above paragraphs, if we understand them rightly, are threefold. First, it is suggested that we should appropriate the £610,400, which the Provincial Governments, at our request, have placed this year at our disposal; secondly, that we should credit ourselves with an equal sum in the ensuing year; thirdly, that we should temporarily divert the Famine Insurance grant from the purposes for which it has been hitherto assigned, and devote the money so acquired to outlay on frontier railways and defence works. Your Lordship bases the recommendations you make to us under these heads on the necessity of maintaining the equilibrium of our finances, without reimposing on the people any of the burdens which have been so lately removed from them.

4. We propose to examine, severally, Your Lordship's recommendations in their relation, primarily, to the engagements by which we are bound, whether to the Provincial Governments or to the public, and, in the next place, in connection with our financial position. We shall then be in a position to ascertain how far the course which Your Lordship has presented to our consideration is consistent with the conclusions to which such an examination may lead us.

5. First with regard to Provincial contracts. When, in the course of the current year, we called upon the Local Governments to assist us by placing at our disposal what economies they could effect temporarily in their expenditure, they responded loyally to the invitation. We gave them at that time no reason to believe that, unless the probabilities of war increased, we should call upon them for further sacrifices; and we cannot but feel that, in the turn affairs have taken, to exact from them as a retrenchment what was asked for as a temporary sacrifice is a measure which requires the very strongest justification. Your Lordship is aware that the contracts expire in ordinary course at the close of the ensuing financial year, so that the question as regards the future narrows itself to the relief required by the Imperial revenues during the ensuing year only. These considerations carry greater weight when we find that the pledges given with regard to the Provincial contracts have been extremely explicit, and justly calculated to give to the Governments the utmost confidence that, except in the circumstances indicated in the assurances proffered at various times by this Government, no interference should take place with their engagements.

6. Apart, therefore, from these special circumstances,—namely, the brief period during which the contracts have yet to run, and the conditions under which the Provincial Governments were invited to assist us this year,—it is desirable to examine briefly what, at different times, has been by us declared to be the general nature of our engagements towards Provincial Governments. The words of Lord Mayo's Resolution of 14th December 1870, inaugurating the system of Provincial powers and responsibility will be in Your Lordship's

recollection : " Unless some fiscal misfortune, such as a heavy loss in the opium revenue, or national disaster, such as war or severe famine, occurs, the Governor General in Council will maintain, for the future, the assignments for ' Provincial Services ' at the amounts now fixed. They will not, in any case, be reduced without previous consultation with the Government." The substance of this declaration has been repeated on the successive occasions on which fresh contracts have been entered into. In 1879, in its Resolution No. 410, dated the 1st May of that year, the Government of India spoke as follows :—

" The policy of maintaining Provincial responsibility for the management of Provincial finances, inaugurated by the Government of India in December 1870, has now been in course of development for nine years with a success which has equalled the most sanguine expectations of its authors. It has led to greatly increased efficiency in many of the chief branches of the public service, to the development of the revenues without addition to the public burdens, and to economy in expenditure. It was one important object of that policy that the normal and obligatory administration of the country should be, as far as possible, shielded from the effects of ordinary vicissitudes affecting the Imperial finances ; and during the last nine years, notwithstanding the serious financial pressure that has often been experienced,—as, for example, that caused by the famine in Bengal in 1874, by the famine in the Madras and Bombay Presidencies in 1876 and 1877, and by the present war on the frontier,—the Governor General in Council has left at the disposal of the Provincial Governments, without diminution, the whole of the resources assigned to them."

When the contracts were about to be revised, the Government of India, in its Resolution No. 3353, dated 30th September 1881, wrote :—

" Another important change which is contemplated requires somewhat fuller explanation. In the Resolution No. 3334, dated 14th December 1870, the Imperial Government, speaking broadly, announced a policy of divesting itself of both responsibility and control within certain limits ; but a reservation was made (paragraph 17) of power to modify the resources granted in the event of ' some fiscal misfortune, such as a heavy loss in the opium revenue, or national disaster, such as war or severe famine.' On two occasions already within a decade this reservation has been acted on. On the occasion of the great famine of 1876-77 in Western and Southern India, the Supreme Government necessarily came to the rescue of the Local Governments in meeting the enormous outlay involved ; but it directed that all Provincial and Local resources must be exhausted before Imperial aid could be supplied. This decision was unexceptionable in the sense in which it was meant ; but it may have led to developments which were not altogether intended. The second occasion on which the reservation has been acted on is that of the Afghan war. The Local Governments were called upon during the years 1879-80 and 1880-81 to contribute £670,000 from the resources made their own by the decentralisation policy ; and in the Financial Statement of 1880-81 (paragraph 170) the hope was expressed that they had been able ' to afford this timely help to the general finances with little apparent difficulty.' The circumstances of the time were, without doubt, peculiar, and the strain upon the finances was undoubtedly severe. But the sudden suspension of improvements in progress, the starvation of Public Works, and the discouragement of care and economy by requiring a surrender of their results, could not, in themselves, be otherwise than prejudicial.

" In modification, therefore, of the reservation hitherto in force, it is proposed to declare, on the one hand, that the Local Governments must look for no special aid from the Imperial Government except in the case of severe famine (and then only within limits to which allusion will presently be made) ; and, on the other, that the Imperial Government will make no demand on them except in the case of disaster so abnormal as to exhaust the Imperial reserves and resources, and to necessitate a suspension of the entire machinery of public improvement throughout the Empire."

In the correspondence between the Government of India and the Secretary of State which followed this Resolution, the latter observed that he thought it would be sufficient to state that the Local Governments would not be called

upon to surrender any portion of their revenues unless the Government of India saw no alternative between such a course and the imposition of taxation which it would not be deemed expedient to undertake. Eventually, however, in his Despatch No. 208, dated the 6th July 1882, the Secretary of State wrote as follows :—

“The first point to which your letter refers is the suggestion which I made regarding the assistance to be rendered by the Local Administrations to the Central Government in the case of an abnormal strain on its resources. Your proposal was to declare that such assistance would not be required, unless the Imperial reserves should be exhausted and a suspension of the entire machinery of public improvement throughout the Empire were rendered necessary. As I thought it not desirable that your Government should have to prove the existence of such a state of affairs before requiring the assistance of the Local Administrations, I suggested that it would be sufficient to undertake not to call on them to surrender a portion of their revenues, unless you saw no other alternative than the imposition of taxes which were not considered expedient. To this Your Excellency replied that my despatch reached you too late to admit of your proposing such a condition pending the preliminary negotiations; and you enquire whether I still desire it to be promulgated, observing that you consider it highly inexpedient, somewhere absolutely unavoidable, to change any of the conditions on which the contracts with the Local Governments were concluded. You express an opinion that, though theoretically open to the objection taken to it, the original condition is not, in practice, likely to cause inconvenience; and I am willing accordingly to waive the question for the present, though I should desire to have it borne in mind when the time arrives for the next revision of the contracts, and that an explanation of this view should be given to the Provincial Governments.”

7. It will be seen, on review of the above passages, that the reserves which, from time to time, have been made by the Government of India, are based on a condition of affairs so serious as to leave to it no alternative but taxation of an inexpedient nature, deficit, or a recourse to Provincial resources. Your Lordship will learn from this despatch what we consider our financial position to be; but meanwhile we desire to express our entire concurrence in the principle upon which the policy is based, and on which successive Governments have acted, and to repeat that it is unquestionable that the success of the system of Provincial contracts depends mainly on the confidence felt by the Provincial Governments in the judicious and temperate exercise of the discretion reserved to the Government of India. Nothing can be more disheartening to the Local Governments, and nothing, therefore, can be so provocative of extravagance, as the feeling that the engagements entered into with them are liable to interruption on occasions other than those determined by the Government of India. On two occasions, as stated in the Resolution of 1881, the Government of India has unhappily been compelled to intervene: once in the great famine of 1876-77, and once in the Afghan war of 1879-80-81. Whatever anxieties we may feel with regard to the ultimate burden to be placed upon us by military expenditure, we are not at present likely, so far as we can foresee, to be called upon to undergo an abnormal strain on our resources corresponding to those which we have cited. Circumstances, it is true, have lately compelled us to review our financial position, and to examine it thoroughly with the object of ascertaining how far our resources are capable of meeting the increased military expenditure which is likely to be placed upon them. With the design of strengthening our resources, in order to meet such addition to our estimates, we have further proposed to Your Lordship an expansion of direct taxation. But our proposals on this head contemplate the carrying out of a measure which, as Your Lordship is aware, has been constantly before our eyes of late years, on the ground of the more equitable distribution of taxation, irrespectively of financial necessities. In these

circumstances we feel no hesitation in deciding that extension of the present system of direct taxation is a lesser evil than interference with the Provincial contracts. Sir Evelyn Baring, in his Minute of the 11th August 1883, forwarded to Your Lordship with our Despatch No. 234 of the 4th idem, speaking of the sum of £670,000 which during the Afghan war was taken by the Imperial from the Provincial Governments in order to help towards paying the expenses of that war, wrote: "This money was given back to the Provincial Governments in 1881; and I may say that there is no act with which I have been connected since I have been in India to which I look back with greater pleasure than the repayment of this money. If it had not been repaid, a fatal blow would have been struck at the Provincial system of finance." The strong sense entertained by our late Financial Member, of the necessity of maintaining the credit of this Government, is shared by us all. As the contracts are now drawing to a close, we shall, however, instruct the Local Governments to enter, in the ensuing year, into no fresh arrangements having for their object the construction of works, or the carrying into effect of measures, which may engage their resources during the approaching quinquennial term. We shall also intimate to them the probability of our being compelled to reduce the revenues which during the last contract were assigned to them; for, although we are opposed to any present interference with those resources, we fully recognise that, when the Government of India is called upon permanently to meet a large increase of expenditure, the Local Governments, on the occasion of a revision of contract, must contribute towards Imperial necessities, and must so reduce their own scale of expenditure as to furnish their share to the common burden. We, therefore, think that both in the spirit and by the express terms of the contracts we are bound to restore to the Provincial Governments, during the ensuing year, with the warning which we have above indicated, the sums which they placed at our disposal; but we shall be careful that the minimum balance of each Government is maintained, subject to the conditions prescribed in Your Lordship's Despatch No. 183, dated 28th June 1883, at the respective figures recorded in paragraph 109 of the Financial Statement for 1884-85. In no case does the balance now at the credit of any of the Local Governments or Administrations, after taking into account the recent retrenchments and expenditure, fall short of the minimum prescribed; while in most cases it is considerably greater.

8. We proceed now to the question of the Famine Insurance Scheme, which we observe has been declared, on the one hand, to have been to all intents and purposes swallowed up, and, on the other, to have so far attained its object as to admit of its being for the present suspended. The objects of that scheme were fully stated in Sir John Strachey's speech of the 9th February 1878 on the Northern India License Bill; and it will be convenient to repeat here so much of his remarks as is necessary for the purposes of this despatch, and to review as briefly as may be the subsequent changes introduced into the fund. Sir John Strachey, in the course of that speech, said —

"As I previously explained, we start with the hypothesis that in every ten years the Government of India will have to spend £15,000,000 on the relief of famine. The case will be put into its simplest form, if we assume that the whole of the £15,000,000 will have to be spent at once at the end of this period, and the arguments I am about to use will not be in any way invalidated by this assumption, though it be not strictly true. Now, as the very foundation of our policy is the resolution not to permit this expenditure to create a constantly increasing charge for interest, the expedient of simply borrowing when the occasion occurs, and thus increasing the annual charges on account of debt, say, by £600,000 in each period of ten years, must, of course, be set aside; and it follows that we can only obtain the £15,000,000

which we require by saving up an equivalent sum in years of prosperity. If we provide for this purpose a *bond fide* surplus of £1,500,000 a year for ten years, we shall have obtained our £15,000,000.

"As we cannot keep our annual savings locked up in a separate box, it is inevitable that when the actual necessity for spending the £15,000,000 arrives, we shall have to borrow the money, so that what we have practically to do is this—we must reduce our debt by £1,500,000 year by year during the whole period, or by £15,000,000 in the ten years, thereby reducing the yearly charge for interest at the end of that time by £600,000. Then, when the necessity for spending the £15,000,000 arrives, we can borrow that amount and incur a fresh charge for interest of £600,000 a year, and be no worse off than we were ten years before. This process, by which in periods of prosperity the charge for interest on debt is gradually reduced, thus constantly restoring the exhausted power of borrowing without increased taxation, is what the Government virtually proposes to adopt.

"In India, however, the policy has been deliberately and wisely accepted, of borrowing every year large sums of money for the construction of the railways and canals which it is absolutely necessary that the country should possess, if its material advancement is not to be arrested. Even if the financial consequences of this policy had been less satisfactory than they have been, it might still have been our duty to persevere in it, though it should have called for increased sacrifices from the country in the forms of taxation. But experience has shown beyond the shadow of a doubt that, looking at the matter even from a purely financial point of view, we could have done nothing wiser and more profitable than go on investing capital in these undertakings; and that, so long as these investments are prudently limited, as they have been up to the present time, so that the growing income derived from the works keeps pace with the charge for interest on the borrowed funds, they may be continued with complete financial safety.

\* \* \* \* \*

"We assume, therefore, that the Government will continue to borrow money on these principles for such productive works.

"Now, it would be obviously absurd to pay off every year debt to the amount of £1,500,000 and simultaneously to incur fresh debt to the same extent. What, therefore, we have to do, in the actual circumstances of the case, is, by, applying to the construction of these works the proceeds of the new taxes, to reduce by £1,500,000 a year the sum which we might otherwise have borrowed. The ultimate financial result of this, as will readily be seen, will be practically the same as that which would have followed if we had devoted every year £1,500,000 to the actual repayment of debt; for, returning to our former hypothesis, we shall, at the end of our ten years, thus have prevented borrowing to the extent of £15,000,000, and our annual charge for interest will then be less by £600,000 a year than it would otherwise have been. We could, therefore, if occasion required, borrow £15,000,000 for the relief of famine, and be in no worse a financial position than we were at the beginning of the period of ten years.

"The soundness of this argument depends, of course, on the assumption that the works which are constructed from our annual contribution of £1,500,000 from the public revenues will be really reproductive; that is, that they will at the end of the ten years produce an income at least equal to the interest which we should have to pay if we had then to replace by borrowing a sum equal to that furnished from the new taxes for their construction. This assumption, however, has no special or peculiar significance in connection with these new arrangements; it is (as I have just explained) the justification of our whole policy of borrowing money for works of public improvement. Whether we construct our railways and canals with borrowed capital or pay for them out of this Famine Insurance Fund, we equally assume that they will eventually give us a return of more than the ordinary charge for interest on the outlay; and to repeat what I have said before, experience has now been sufficiently prolonged to show conclusively that, notwithstanding all the mistakes that have been made, the gradual growth of the income of the productive public works has been sufficient to protect the Imperial Treasury against any increase to the actual charge for interest on debt. This explanation will show the Council how, either by the direct charge of debt or by the investment of money in



productive works, if the circumstances of the time should render that course more suitable, charges on the revenue may be extinguished, or new income created, which shall enable the Government to borrow in the future to the full extent to which the proceeds of the new taxes are applied, and that a true Famine Insurance Fund will thus have been created."

In our Resolution of the Government of India, No. 1911, of the 18th March 1878, the method in which the scheme of Famine Insurance was to be put into operation was thus defined:—

"It will manifestly be a necessary condition of success," it was observed,\* "in carrying out such a policy that the works undertaken shall in fact produce the growing income from which to

\* Paragraphs 76-77-78.  
meet the gradual increase of interest charge; and it therefore becomes essential to examine very strictly the character of all projects brought forward for execution, so that borrowed capital shall not, under any circumstances, be supplied for any work of which it cannot reasonably be anticipated that it will in a definite period of time produce a net income at least as great as the interest on the capital outlay upon it. Further, the same limitation that it is thus necessary to apply to the grant of borrowed money to these works must also be applied to the grant of all funds the expenditure of which does not appear as a direct charge against the revenues of the year, under which will be included the new resources lately specially created to provide a surplus from which to meet charges on account of the relief or prevention of famine." . . .

"The justification for granting, for productive works, funds from the surplus revenue which might otherwise be applied to the extinction of debt is that, so far as it prevents an increase of debt, it will be virtually equivalent to a corresponding discharge of debt—a condition, however, that cannot be fulfilled unless the works are properly remunerative."

In Despatch No. 62 of the 20th February 1879, from the Secretary of State, the arrangement indicated by Sir John Strachey, in the terms which we have above quoted, was so far modified that, while it was held that a first claim on the receipts from special taxation being that of the Home Government for the repayment of debt already incurred on account of famine, £750,000 should be held available for remittance to England on that account, consent was given to the annual appropriation of the remainder of the fund at the discretion of the Government of India to the extinction of the debt, to the relief of famine, or to the construction of protective works not necessarily directly remunerative, but obviously productive in the sense of guarding against a probable future outlay in the relief of the population. These arrangements, however, had scarcely been formulated when two important elements of disturbance entered into the general finances,—namely, the fall of silver and the Afghan war. It was therefore argued in some quarters that whatever good had been done by the Famine Insurance Taxation had been undone, and more than undone, by these new charges, and that the policy had to be begun again. Sir John Strachey, in his Financial Statement, made on the 24th February 1880, fully met such objections. The Government of India, in their Despatch No. 30 (Financial) of 2nd February 1881, stated that the general policy of the Famine Insurance scheme had "met with general approval in 1877, and indeed, so far as we are aware, has never been impugned;" and that "if the policy is to be continued, as we think it should, it will be advisable to give some additional security to the tax-payers that £1,500,000 a year will be applied either to the direct relief of famine or to providing an insurance against famine in future years." The result of the discussion was a decision that no connection should be recognised between the famine insurance outlay and the license tax and cesses originally imposed to meet it, but that the former should be treated as a charge only, and invariably pro-

Secretary of State's No. 135  
(Financial) of 14th April  
1881.

vided for in the Budget Estimate, up to the full amount of £1,500,000. In the Financial Statement of 1881-82, it was announced that the sum of £15,000,000 to be provided annually as an insurance against famine, instead of being considered, as heretofore, to be a surplus receipt for subsequent appropriation, would be treated as a fixed portion of the normal expenditure of each year. At the same time the Government of India reaffirmed its applicability to the extinction of debt, the relief of famine, or the construction of protective works, not necessarily remunerative, but obviously protective in the sense of guarding against a probable future outlay in the relief of the population. It was also pointed out that the amount to be provided as an insurance against famine was only so far dependent upon the receipts from the License Tax and the Public Works cesses that those receipts go to swell the general revenue, and by so much facilitate the execution of the policy under discussion; that the aim of the Government was to apply annually a specified sum from the general revenue in order to provide an insurance against famine; that there was no special connection between the amount so provided and the amount received from the License Tax or the Public Works cesses; and that those taxes had never yielded so large a sum as £1,500,000 in any one year. Subsequently, in Government of India Resolution No. 683, dated the 3rd February 1882, it was laid down that the relief of actual famine would be a first charge upon the whole million and a half annually provided as expenditure; that protective works would be the next charge, but only to the extent of three quarters of a million, or such portion of that sum, if any, as may remain after all necessary relief of actual famine has been afforded; and that the remaining three quarters of a million should be assigned to reduction of debt, except so far as all or any portion of it may be needed for relief of actual famine. The arrangement then laid down has continued in force up to the present time; and of the sum of £750,000 to be annually spent upon protective works, £500,000 has been allotted to railways and £250,000 to works of irrigation.

9. Having thus given the history of the design and application of the Famine Insurance scheme, we proceed to consider whether it can be said either to have fulfilled its object, or to have been defeated and rendered inoperative by subsequent financial exigencies.

10. Your Lordship states in the present despatch that the ordinary debt has been reduced by £14,000,000 during the last ten years, and, therefore, that the object of the Famine Insurance arrangement has in fact been attained, though, no doubt, not wholly through the operation of the measures directly taken for that object. The operation of the Famine Insurance scheme, it must be observed, did not commence till 1878. We observed, also, that credit cannot be taken for so large a figure as £14,000,000. The total debt of India on the 31st March 1875, according to the Finance and Revenue Accounts presented to Parliament, is shown to be £118,446,992. The reduction of £14,000,000 on this figure is subject, however, to the following deductions. In the first place, we must take out the outlay provided for from the ordinary revenues previous to 1875-76, but which was subsequently transferred to debt:—

	£	£
Irrigation . . . . .	5,308,367	
Railways . . . . .	256,499	
	<hr/>	5,564,866
This amount being deducted from the sum of		
£14,007,208, the reduction of debt becomes	...	8,442,342

Further, by the operation of the Sinking Fund the debt incurred for the East Indian Railway has been reduced—

	£	£	£
To end of 1883-84. . . .	108,305	...	...
Estimate 1884-85 . . . .	40,000	...	...
	<u>          </u>	140,305	
			<u>140,305</u>
The actual reduction therefore is . . . .			<u>8,302,037</u>

If, on the other hand, we take as our starting-point April 1st, 1878, from which date the operation of the famine insurance scheme may be said to have begun, the following are the results of the operation of the scheme up to the commencement of 1885-86 :—

	£
Total debt on 1st April 1878 . . . . .	134,631,553
Capital expenditure on productive Public Works to that date . . . . .	29,091,023
Difference . . . . .	<u>105,537,530</u>
Ordinary debt on 31st March 1885 . . . . .	<u>88,216,725</u>
Net reduction of ordinary debt . . . . .	17,320,805
Deduct on account of outlay provided for from ordinary revenue previous to 1878-79 (inclusive of East Indian Railway Sinking Fund) . . . . .	5,971,025
Actual reduction in the 7 years . . . . .	<u>11,349,780</u>

Had there been, however, the usual loan in 1884-85, the reduction of ordinary debt would have been less by  $2\frac{1}{2}$  millions. The loans of the present and ensuing year, in consequence of there having been no loan in 1884-85, must be materially in excess of what would otherwise have been the case, thus considerably diminishing in the course of the current decade the probable reduction. The proportion, therefore, of the ordinary debt reduced in the first seven years of the current decade is not likely to be maintained during its remaining term.

11. Although, further, as Your Lordship states, the net charges for Railways and Irrigation Works may have decreased from £2,068,000 to £1,100,000, and our general position have been thereby improved to that extent, we cannot credit the Famine Insurance scheme with this result, as the works which have yielded it were only in part executed by the aid of that scheme.

12. If the actual reduction of debt under the operation of the Famine Insurance scheme has thus not been such as to warrant the conclusion that the object of the latter has been attained, still less can such a conclusion be admitted so long as a very large proportion of the Railway and Irrigation Works which have been accepted as necessary for the reasonable security of the country against famine remain uncompleted. It was recognised, as we have seen, in 1879 that the fund might be appropriated to the construction of protective works not necessarily directly remunerative, but obviously protective in the sense of guarding against probable future outlay in the relief of the population. We cannot admit that we should abandon our efforts to carry out this portion of the scheme, which has for its object the carrying to completion of works which are productive in the sense that they lessen, on the recurrence of famine, the cost to which we must unavoidably be put. We stated in our despatch of the 22nd September the considerations which lead us to believe that this latter object is as yet far

from being attained. We may point out here that the Famine Commission in their Report, writing in 1880, contemplated an extension of the railway system then existing by a length of 10,000 miles in the course of the next 25 years; but they regarded the completion of one half of this amount, or 5,000 miles, as more urgent in its nature; saying that this mileage, "in addition to the existing lines, would go far to remove all future risk of serious difficulty in supplying food to any part of any district in the whole country." Up to the present time only 2,900 miles of railway, other than frontier railway, have been completed. Until, therefore, we have completed the works indispensable to the protection of the country from the effects of famine, we are unable, except under pressure of absolute necessity, to assent to the diversion of the revenues raised under the scheme from the objects with which the scheme was started. Although this may expose us to the criticism that by this use of the Famine Insurance grant we run the risk of incurring a deficit, and thereby adding to, in lieu of reducing, our debt, we believe that our justification will be found in the reply that the abandonment of the protective scheme now before Your Lordship will expose us eventually to greater financial loss than any deficit likely to be incurred (abnormal disaster apart) during the period of construction. We are aware that there is no special connection between the amount annually provided from the general revenues in order to provide an insurance against famine and the amount annually received from the License Tax or the Public Works cesses. But in strengthening our revenue the Government of India, beyond all doubt, has deliberately affirmed the policy of utilising the increased resources placed at its disposal for the purposes to which we have referred; and unless it can be shown that financial pressure compels us to alter our policy, we consider that those purposes should be maintained, and that it would at present be wholly premature to affirm that the object of the Famine Insurance arrangement has been attained. We may again quote Sir John Strachey's words in the course of the speech we have already referred to, as completely expressing our own views: "So far, however, as we can now speak for the future, the Government of India intends to keep this million and a half as an insurance against famine alone. . . . We consider that the estimates of every year ought to make provision for religiously applying the sum I have mentioned to this sole purpose; and I hope that no desire to carry out any administrative improvement, however urgent, or any fiscal reform, however wise, will tempt the Government to neglect this sacred trust." In the debate which followed Sir John Strachey's speech, Lord Lytton emphatically pledged the Government to the execution of the necessary works from the increased revenues raised under the name of the Famine scheme. His Excellency anticipated the objection that "the current claims upon the activities and resources of the Government of India are so numerous, so pressing, so important, official forces and imperial funds so necessarily limited, that whenever the daily hourly strain of a great famine has been removed from a wearied administration and impoverished treasury, its fearful warnings are soon forgotten; its disquieting ghosts are quickly exorcised by the conventional declaration of some unexceptionable principle; its bitter memories decently interred beneath the dull *hic jacet* of a blue-book; and there, for all practical purposes, is an end of the matter." Lord Lytton declared that the Government was not open to this customary criticism; that it promised nothing which it had not provided itself with the means of performing; that it spoke of what it could and would do; and that it was "a policy on which all our plans, and all our hopes for steady improvement in the financial, social, and administrative condition of this Empire, are necessarily dependent." The proposals which we have submitted to

Your Lordship in regard to the partial capitalisation of the resources raised under the Famine scheme have, in effect, for their object the strengthening of our revenues; we believe this proposal to be consistent with the objects for which the scheme was created; but beyond this, we feel that we are not justified in proposing any application of those resources differing from that to what they are at present devoted.

13. We may now sum up our remarks on the Famine Insurance scheme. We have seen that its object was to ensure such a surplus of ordinary revenue over ordinary expenditure as would suffice to cover within each decade the outlay on relief of actual famine which might be expected to occur during that period. The method of carrying out the scheme was varied in view of experience and criticism, that finally adopted and now in force being that a certain portion of the surplus should be devoted annually to the direct reduction of debt, or to the avoidance of debt, which must otherwise be incurred, and that the remainder should be spent on railways and irrigational works likely either to avert or mitigate famine. The result of the former allotment is to save interest, simple and compound, and thus to place the Government, when the necessity of a loan for famine relief arises, in a better position for borrowing, both as to terms and amount, than it would otherwise have been. The result of the latter is two-fold; whatever return the works may produce is, on the one hand, a set-off against the interest of such a loan; while, on the other, the actual amount needed for famine relief, and therefore of the loan, is lessened by the existence and operation of the works. The effect of the scheme, from a purely financial point of view, has so far been that, but for its application, our position would have been worse than it now is by any interest yielded by the works carried out through the agency of that fund, by the amount of debt redeemed, and by the sums which we have annually devoted to lessen our borrowings.

14. If the returns from the works or the saving of interest by the discharge of debt should happen to be appropriated to new expenditure, ordinary or extraordinary, the operation of the scheme remains unaffected, because, but for its existence, new taxation would have been unavoidable to meet the new expenditure. Such taxation the scheme defers until the day when a famine loan is indispensable, or, if there should then be a surplus independently of it, it furnishes the means of avoiding taxation altogether. Thus, in view both of the works which have been and are being executed through their agency, and of the actual reductions of debt, or avoidance of fresh debt, and the saving of interest on the same, which have been and are being secured, it does not appear to us to be precisely accurate to describe the funds provided under the Famine scheme as having been swallowed up. Nor can the object of the scheme be described as having been attained, as long as either the admittedly most important protective works are incomplete, or as the necessity for outlay on actual relief in time of famine remains.

15. It is, at the same time, obvious that the effect of the protective works must be to diminish the outlay on actual relief, and we therefore consider that the total capital sum which the scheme is calculated to provide should be subject to periodical revision. Such a revision might well take place in the year 1890-91, by which date we have estimated, in our Financial Despatch, No. 264 of the 22nd ultimo, that all the protective works of major importance will be finished; or, in the event of our obtaining the refunds for which we hope as a part of the arrangement therein proposed, it might be effected a year or two earlier. On the occasion of such a revision, we should be enabled, if necessary, to assign to ordinary purposes so much of the present Famine Insurance grant as is not

required to countervail whatever may be the new amount then fixed as the probable average outlay on actual relief in the new decade.

16. We have thus concluded our examination of the circumstances in which we stand with regard to the Provincial contracts and the Famine Insurance scheme. We have shown that the former has been repeatedly declared to be only liable to appropriation as a source of Imperial revenue in the event of extreme calamity. We have sought to prove, under the same reserve, the necessity for the continued application of so much of the Famine Insurance grant as remains to us after devotion of £750,000 to diminish borrowing. We now proceed to examine our financial situation with a view of ascertaining whether our circumstances are indeed such as to compel us to have recourse, either to interfering with the Provincial contracts, or to a temporary diversion of the Famine Insurance grant, or to both of these measures.

17. In our Despatch No. 234, dated 22nd August 1885, we indicated the sources from which we propose to meet the additional military expenditure which is about to be imposed upon us. We confined ourselves, as will have been apparent to Your Lordship, in that despatch to a consideration of the annual sum by which our revenue was to be increased, in order to meet a specific charge about to be imposed upon it; but we refrained from any such general review of our position as lay outside the question immediately before us. It is necessary now, however, to enter more fully into our general situation, and to show why, in our opinion, there is no necessity at present for interfering either with the Provincial contracts or with the Famine Insurance Fund. We may take as our point of departure the Budget of the current year, which, as we are aware, and as Your Lordship states, exhibited a bare equilibrium. The Budget of 1885-86, however, must, in certain important respects, be regarded as abnormal. The railway receipts were taken at an exceptionally low figure, owing to the depression existing at that time in the export trade. The estimate of opium receipts was also reduced, owing to the necessity which at that time existed for increasing our reserve. As we stated in our despatch of the 22nd August, we devoted in that Budget, from Revenue, with your predecessor's approval, the sum of £585,000 for Railways and Defence Works. But the export trade is reviving; the comparative exports of wheat for the first seven months of 1883, 1884, and 1885, are given in the margin; the export of oilseeds is assuming increasing and very considerable dimensions; and in our half-yearly estimates we expect to be able to take credit for a sum of £500,000 on account of net Railway receipts in excess of the sum which at the time of the Budget we thought it prudent to accept. Should exchange remain at about its present rate, we consider that it will be safe to maintain that figure in 1886-87. We shall be enabled next season to put upon the market a larger amount of opium than has been possible during the last two years, and we may take the increase to our revenue thereby obtainable at a figure not less than

	Cwt.
1883 . . .	14,343,243
1884 . . .	7,931,659
1885 . . .	11,501,512

	Chests sold.	Net Revenue.	On 31st Decem-ber.	Reserve- (Chests)	£300,000.
		Rs.			
1882-83 . . .	56,400	7,21,83,000	1882	12,743	
1883-84 . . .	54,400	7,70,18,000	1883	11,632	
1884-85 . . .	46,698	5,89,02,000	1884	2,296	
1885-86 . . .	50,994	6,54,73,000	1885	18,290	
1886-87 (Estimated)	54,000	6,54,73,000	1886	29,220	

the reserve for 1886-87, and they will enable Your Lordship to judge of the moderateness of the sum of £300,000 which we assume as an addition to next year's estimates. The £585,000 assigned in this year's Budget to Railway and

Defence Works are in future, in view of the urgency of our situation, to be devoted to ordinary expenditure, and the charge for which this sum was to serve is to be debited to loan. We further expect that the extension of direct taxation will yield us £700,000 additional. The decrease in the non-effective charges during the ensuing year may be set down at £150,000; and, apart from railway receipts, the annual increment of our revenue may also be taken at £150,000. The minimum increase, therefore, to our revenue over the Budget of the present year will be, so far as, on what appear to us cautious and reasonable calculations, we can estimate £2,385,000. We arrive at this estimate without taking into calculation any reductions that we may effect; and on the assumption that our railway receipts in 1886-87 will be no greater than in the year 1883-84, although in 1886-87 we shall have more than 1,000 miles of railway open in excess of 1883-84. The rice trade shows every symptom of revival; the customs have yielded this year, to the end of August, R46,92,000 against a total estimate of 53 lakhs, being for the five months R7,37,000 in excess of the corresponding period of last year. The rains, on the whole, have been sufficient, and the prospect before us for the ensuing year may be regarded with satisfaction. On the other hand, we must prepare for an addition next year of one million to our Military Estimates, and of £880,000 on account of Exchange, on the assumption that in the Budget of the ensuing year the rupee will be taken at 1s. 6d. To this we may add £100,000 on account of increased charge for interest, making a total of £1,980,000, and leaving a surplus of £405,000, which appears to us a reasonable expectation. Should Exchange prove even somewhat more adverse than we anticipate, it may be expected, on the other hand, that our railway receipts will be increased by the stimulus given to exports, and that the figure of £500,000 based on the estimates of 1883-84, which we have taken as our estimate for the receipts of next year, will be considerably exceeded. At the close of the ensuing year the Provincial contracts expire, and we shall be enabled to strengthen our revenue by whatever sum is obtainable on a revision of those contracts. Viewing, meanwhile, the general situation of our revenues, we see at present no reason to doubt that they will prove equal next year to the expenditure to be placed upon them.

18. It will be apparent to Your Lordship from the above remarks that we are not prepared to recommend, at present, the measures indicated to us in Your Lordship's despatch. The choice before us, in truth, lies between strengthening our budgetary surplus by £750,000, acquired at the cost of putting a complete stop, for the next four or five years, to works designed to protect us and the people from the effects of famine; or pushing the works to completion as rapidly as may be with the aid of the Famine Insurance surplus, and exposing ourselves to the risk during that term of what at the worst, unless circumstances very greatly alter, will be but an inconsiderable deficit. We cannot but think that the employment of the Famine Insurance surplus for the completion of the scheme of work on which we are engaged is a more economical and a more suitable use of it than its temporary utilisation as an addition to the surplus revenues exhibited in our accounts. We believe that during the comparatively short term required to carry out the great projects on which we are engaged, we should be prepared to accept a risk of temporary difficulties in respect of the absolute equilibrium of our finances greater than any we can at present foresee, in the assurance that when the projects now in hand are completed, a stability will have been given to our finances which they could not otherwise have attained. The proposal which we have made to Your Lordship in respect of a partial capitalisation of the Famine Insurance grant is in effect an alterna-

tive to that which has been placed before us. It amounts to a proposal to strengthen our revenues by the amount so capitalised ; the difference between our proposal and that submitted to us being, that instead of devoting that sum to an unappropriated surplus, we desire to assign it to the payment of interest on projects which are a part of the scheme itself, since they are essential to the protection of the country from famine, while they will assist the development of the export trade, on which our railway receipts so largely depend. We may add that in our despatch of September 22nd we have estimated the total charges for the purposes there described at  $21\frac{1}{2}$  millions in the next five years, of which we have advised recovery, by arrangements with companies on account of lines now conceded or to be conceded, of £7,640,000, leaving  $11\frac{1}{2}$  to be raised in the market by loan for the purpose in the next five years, after deducting £2,500,000 employed during those five years from the Famine grant. Inclusive of Irrigation capital, the total loan to be raised in the market in the five years will be fifteen millions, if our proposals as to capitalising the Famine Fund are accepted.

19. Apart, finally, from the considerations which, in the course of this despatch, we have urged upon Your Lordship's attention, we cannot but feel that it would add greatly to our difficulties at the precise moment when we were about to impose a more extended scheme of direct taxation, if we laid ourselves open to attack in connection with the Provincial contracts or the Famine Insurance scheme. The latter subject, especially, is one on which in former times there have been much misapprehension and considerable expression of public dissatisfaction, which have recently reappeared, and have been strenuously renewed on the occasion of the recent retrenchments. If our circumstances were such as to enable us to plead the justification of necessity, we should have no hesitation in adopting the policy suggested by Your Lordship ; but it is impossible not to apprehend that the plea of necessity would prove of questionable validity. Although we have no desire to speak with confidence of the future, we cannot but feel that our financial position is not at present such as to oblige us to resort to extreme measures, the result of which must be to put a summary stop to many works of great importance now in hand ; to cause thereby considerable ultimate loss to our revenues ; to expose us to greater risks in the event of famine ; and to disturb the confidence which at present exists between the Imperial and the Local Governments. We judge it more prudent to confine ourselves at present to the circumstances with which we have immediately to deal, leaving to a later period the consideration of the steps to be taken should unforeseen difficulties increase upon us. We propose, however, as we have stated, not only to take the measures necessary to prevent any increase to our own present expenditure, but to restrain the Local Governments from entering during the ensuing year upon fresh projects or engagements of a nature to tie up their revenues during the next term of the Provincial contracts.

20. It appears to us, to sum up, that our aim should be to carry out, with the utmost possible promptitude and in the most economical manner, the series of works embodied in our despatch of the 22nd September, so that on their completion we may be in a position to reconsider the average annual sum to be set aside in order to countervail borrowing on the occurrence of actual famine, and thus to regain possession for ordinary purposes of so much of the present grant as may then be found to be no longer required. On the other hand, in the absence of any unforeseen calamity or disaster, we think that there is reasonable ground for feeling confidence in our ability to maintain, during the interval necessary for the construction of these works, the equilibrium of our finances,



and that the time has not yet come when we should suspend, even partially, a portion of the Famine Insurance scheme or fall back upon the Provincial contracts, immediate recourse to which will, in our judgment, lead to difficulties greater than any which we are at present likely to encounter. Until the year draws nearer to a close, and the position of the silver market becomes more certain, we shall not be in a position to pronounce finally on our actual position. Whatever steps may be dictated to us by necessity in regard to the Provincial contracts, we trust that we shall be enabled to meet our difficulties without being called upon to divert or suspend the present operation of the Famine Insurance scheme.

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Extract, paragraphs 1 to 7, of a Despatch from the Secretary of State for India, to the Government of India,—No. 271 (Military), dated 15th October 1885.

I have received and considered in Council Your Lordship's Military letter of 10th July 1885, No. 112, forwarding, for the consideration of Her Majesty's Government, papers regarding the measures to be taken for the defence of the North-West Frontier of India, with the recommendations of your Government thereon.

2. With respect to the roads, railways, and bridge detailed in the 3rd paragraph of your letter and already sanctioned, I have only to express my earnest desire that they may be pressed forward with such energy as to ensure their completion within the period estimated by your Government,—*viz.*, the end of the year 1887-88.

3. With regard to the proposed extension of the projects already sanctioned, I entirely concur with your Government as to the desirability of extending the Pishin line to such a point beyond the Amran Range as will enable its further extension to Kandahar, in the event of circumstances calling for such a measure being undertaken without delay.

4. I am very hopeful, however, that it will be found practicable to lay a surface line by which to turn the mountain further south, and the experience gained in 1878, when heavy field artillery with elephant and bullock draught were successfully taken over the Gwaja Pass, affords ground for believing that no insuperable engineering difficulties will be found on that line, thereby obviating the need for having recourse to the undesirable alternative of tunnelling.

5. I concur also with your Government in regard to the expediency of converting the temporary line sanctioned by Lord Kimberly from Sindli through the Bolan Pass to Darwaza into a permanent one, thereby providing an alternative line to the Sind-Pishin Railway; and I shall be glad to learn that on your further examination of this project it is found to be practicable within a reasonable limit of cost.

6. I sanction your carrying out the proposal to provide a branch of the Lala Musa and Multan Railway to Mianwali.

7. With respect to the recommendation of the Defence Committee, that the new State Railway which has been completed to Fazilka shall be continued down the left bank of the Sutlej to Bahawalpur, I greatly prefer, from a strategic point of view, the scheme suggested by your Government for constructing some cross line of railway connecting the Rajputana system with the Indus Valley system. Some such measure is certainly needed to render the system of communications with the frontier complete, and is consequently to be desired. I await further communications from Your Lordship on both these projects.

No. 367 (Financial), dated 10th December 1885.

From—The Secretary of State for India,

To—The Government of India.

I have considered in Council Your Excellency's letters, dated the 22nd of August, No. 234, the 22nd of September, No. 264, the 29th of September, No. 271, and the 6th of October, No. 275.

2. In the first of these letters Your Excellency proposes that, in view of the increase of your permanent Military charges, estimated at 1,000,000*l.*, in 1886-87, rising ultimately to 1,500,000*l.*, you should make no grant from revenue next year towards the cost of frontier railways and defences, the provision of the necessary funds being obtained by loan; and that the License Tax should be modified in such a manner as to embrace the professional and official classes, and to assume the form of an income tax on all incomes of *Rs.* 2,000 a year and upwards, those derived from land being, however, exempted.

3. Your letter No. 264 deals with the subject of capital outlay on railways and defensive works, regarding which it is sufficient for the present to say that you propose to devote no revenue in 1886-87 towards this expenditure, except such as may be available from the Famine Insurance grant, the remainder being supplied by loan.

4. The letter of the 29th of September, No. 271, reports that, owing to the necessity of making further grants during the present year, and to a miscalculation as to the amount of savings, the reduction of expenditure in the present year on the public works contemplated in the Budget is less by about 24 lakhs than had been previously anticipated.

5. The letter No. 275, written on the receipt of my despatch of the 27th of August, No. 239, deprecates any interference during the coming year with the Provincial allotments or the Famine Insurance scheme, expresses your intention of restoring to the Local Governments in 1886-87 the sums temporarily withheld, and intimates a confident expectation that, with no further taxation than has been already recommended, you will be able to realise a surplus of 405,000*l.*, provided that the rate of exchange does not fall below 1*s.* 6*d.* the rupee.

6. In regard to the question of taxation, I concur with Your Excellency in thinking that the alteration of the existing License Tax, so as to assess the official and professional classes, and to levy a rate of the nature of an income tax on incomes of and above *Rs.* 2,000 a year, is desirable; and I observe with much pleasure your opinion that no further imposition of taxation will be necessary. I shall be glad to learn the details of the proposed measure when your Government have more fully considered them.

7. In reference to the suggestions made by me regarding the Provincial contributions, I need not say that it is only in the last resort, as an alternative to an increase of the taxes of the people, that I should wish in any manner to interfere with the working of the quinquennial arrangement made in 1882. The point which I desired to impress upon Your Excellency is one by no means inconsistent with the spirit of that arrangement, namely, that, on the occurrence of such an emergency as arose this year, it is the duty of all parts of the Indian Administration to unite in measures necessary for the common welfare, and that the Provincial Governments should be prepared to take their share of the burden. In the 52nd paragraph of my despatch of the 27th of August, I cordially recognised that the Provincial Governments had shown a readiness to effect the necessary measures of economy. It is for you to consider whether it is proper

that such measures should give merely temporary relief to the balances, and whether by promptly refunding the sums withheld from the Provincial Administrations, the whole burden of the additional charges should be thrown on the limited portion of the revenues which is more immediately controlled by your Government, the result of which must be to compel you to meet the charge by loan, and, if Your Excellency should eventually find that the state of your resources admits of the replacement of this money at the disposal of the Local Governments, I will not withhold my assent from such a course, it being understood that, in the revision of the Provincial agreements in 1887, care will be taken to provide for such a contingency as has now arisen.

8. I propose in another despatch to address Your Excellency in regard to the very urgent need which has, in my opinion, arisen, for exercising the greatest economy in all branches of the administration, and especially in the expenditure on ordinary public works.

9. My observations respecting the disposal of the grant for Famine Insurance were actuated by motives somewhat similar to those which dictated my remarks on the Provincial contributions. It was to meet the emergency which has arisen that I intimated my view that, rather than resort to the imposition of considerable fresh taxation, I should be prepared to sanction the diversion, for the time, of the grant for Famine Insurance, to works needed for the protection of the country against the more pressing danger of war.

10. On both these questions I am content to leave the decision in the hands of Your Excellency, when the time comes for a final determination as to the financial measures of the ensuing year.

11. I now come to the manner in which you propose to meet the outlay on the railways and defensive works. In the tables appended to your letter No. 264, the total cost is given, as follows, in lakhs of rupees:—

WORKS,	Spent to end of 1884-85,	1885-86.	1886-87.	1887-88	1888-89.	1889-90	1890-91, or subse- quently	Total esti- mated cost.
Frontier Lines in progress .	84½	326½	216½	48½	...	..	...	675½
Ditto, proposed . . . .	...	...	25	35	...	142	...	202
Protective Lines in progress	129	115	86½	60½	(say 47) 94	(say 47) 40½	(say 48) 14	534½
Ditto, not commenced . .	..	...	..	..	76	178½	193	417½
Lines under agreement . .	..	..	10	16	19	16	...	61
Stores and Working Capital	114½	119½	100	100	70	70	70	614
...	...	..	10	10	15	20	20	75
Total Railways . . . .	328	561	416½	269½	321	372	345	2,043½
Frontier Defences . . . .	...	4	39	45	44	...	27	159
Coast Defences . . . .	...	7½	15	15½	12	(say 13½) 13½	(say 13½) 13½	50
GRAND TOTAL . . . .	328	572½	500½	330	377	386½	359½	2,852½

12. After the year 1886-87 it is your intention to spend 330 lakhs a year, namely, 280 lakhs of borrowed money and 50 lakhs of revenue from the Famine Insurance grant, together with such sums as may be at your disposal through the refunds anticipated from private companies. In 1886-87, however, you propose, including the irrigation works, to expend 596 lakhs,\* although you are unable to make any grant from revenue, except that which is provided under the head of Famine Insurance; and, therefore, if some 10 lakhs are reserved for Famine Relief, and the remaining 140 lakhs taken for outlay on Protective

	Lakhs.
* Railways . . . .	447
Defences . . . .	54
Irrigation :—	
Loan . . . .	70
Famine Insurance	25
	596

Works and in reduction of borrowing, there will remain 456 lakhs for railways, irrigation, and defensive works, to be provided next year from loan.

13. Large as is the amount of the expenditure thus contemplated in 1886-87, I will not withhold my sanction from Your Excellency's proposal to obtain the funds from borrowed money, such a course being in my opinion rendered necessary by the importance of rapidly completing the works already begun, especially those for the protection of the country against the risks of war or famine. At the same time, I rely on Your Excellency to take all possible care that the outlay shall not be allowed to exceed what is absolutely requisite for these important purposes.

14. I do not deem it necessary, at present, to pronounce an opinion on the programme which you have laid before me, for years subsequent to 1886-87, as the rate at which progress can be made must be contingent on many circumstances on which no confident opinion can at present be formed. The disposal of sums obtained from private companies, in repayment of money previously laid out, will be considered from time to time as occasion arises.

15. Great objection has been taken, both by former Secretaries of State and by the Select Committee of the House of Commons last year, to the proposal to appropriate as interest any portion of the Famine Insurance grant, the declared object of which was to keep down debt. I recognise, however, that the circumstances of the present time are of a special character, and could not have been contemplated either by my predecessors or by the Parliamentary Committee; and I do not interpret Your Excellency's proposals as desiring to obtain a pledge as to the future sanction of outlay through the agency of Guaranteed Companies, which would naturally have to be obtained in each case in the usual manner, after careful consideration of the existing financial exigencies.

16. Assuming that at any time it is determined to incur the liabilities involved in the grant of a guarantee to a Railway Company, it becomes little more than a question of account whether the interest payable in consequence is charged under the head of Famine Insurance or under that of Railways. I therefore authorise you to charge against the Famine Insurance grant the amount payable during the next five years as interest on capital raised by companies for the purpose of constructing any of the lines which are mentioned by your Government as being, in your opinion, needed for the protection of the country against famine, but which you are not at present able to construct through State agency.

17. In doing so, however, I am anxious that I may not be considered as in any way authorising, encouraging, or even suggesting, the policy of regarding the Famine Insurance grant as a fund which may be legitimately resorted to for the payment of interest on any large or novel Public Works expenditure.

18. With reference to Your Excellency's final suggestion regarding the Bengal-Nagpore Railway, I request to be informed what terms you would think it desirable to offer to a company, if one should be formed for its construction, bearing in mind that considerable difficulty has been this year experienced in launching a company for the construction of the Indian Midland Railway, although a permanent guarantee of 4 per cent. in sterling, and a fourth share in the surplus profits, were the not unattractive features of the scheme.

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Extract, paragraphs 35 and 39-52, from a letter from the Secretary of State for India, to the Government of India,—No. 216 (Financial), dated 29th July 1886.

35. In the group of buildings and roads, the expenditure shows an increase of 745,191*l.*, of which 158,547*l.* under Military Works arises chiefly from a pro-

vision of 150,000*l.* being made for additional accommodation in consequence of the larger European force; while 586,644*l.* is for Civil works, and is due to special grants of 200,000*l.* for Frontier roads, and 100,000*l.* for Upper Burma, the remainder being for increased outlay by the Provincial Governments, particularly in Bombay and Bengal. In the 8th paragraph of the despatch sent to Your Excellency on the 10th of December 1885, No. 367, Lord Randolph Churchill expressed his intention of addressing you regarding the very urgent need of a reduction of expenditure, especially on the ordinary Public Works. While such a despatch was being prepared, information was received of your intention to

*Expenditure on Buildings and Roads.*

		Average of five years.
	£	£
1875-76	4,683,930	4,379,552
1876-77	4,561,185	
1877-78	4,251,110	
1878-79	4,341,669	
1879-80	3,925,125	
1880-81	4,431,685	5,260,705
1881-82	5,047,873	
1882-83	5,331,281	
1883-84	5,810,767	
1884-85	5,009,277	
Revised Estimate	1885-86	4,702,900
Budget	1886-87	5,449,300

appoint a Committee in India to examine the subject; and I therefore refrained from taking it up in the meantime. I desire, however, to draw Your Excellency's attention to the table in the margin, taken from the Appendix to your Financial Statement, from which it will be seen how very largely the expenditure in this branch has increased during the currency of the existing Provincial agreements, and that even if allowance be made for the special

grants above mentioned, the outlay proposed in the Budget is nearly 800,000*l.* greater than the average of the five years ending in 1881-82. This class of expenditure takes place almost entirely in India, and is therefore not exposed, as are so many of the other heads, to great increase owing to the fall in exchange. It is, indeed, peculiarly within the control of the various Administrations; and I trust that stringent orders will be issued to carry yet further the reduction which I am glad to perceive has already been made, when compared with the charge of three or four years ago.

39. The total expenditure, Imperial and Provincial, estimated for 1886-87, exceeds that of the Revised Estimate of 1885-86 by 252,770*l.* Last year, however, it is expected that the allotments to the Provincial Governments will have exceeded their expenditure by 113,900*l.*, while in 1886-87 they are to defray from their balances 575,400*l.* of the total outlay. Thus, the portion of the expenditure chargeable on the revenues of the year would be reduced by 689,300*l.*, and, consequently, when the excess of 252,770*l.* above mentioned is deducted, it would be less than in 1885-86 by 436,530*l.* As, however, it became apparent that this was insufficient to give the requisite equilibrium, the Local Governments were called upon to contribute to the Imperial Government a sum of 400,000*l.* from their share of Land Revenue during the year, a measure by which the charge falling on them was raised to 975,400*l.*, and the relief to your Government, as compared with the Revised Estimate of 1885-86, was increased to 836,530*l.*, the total expenditure chargeable on the revenue becoming 75,616,500*l.*, and a surplus of 182,200*l.* being shown.

40. I approve of the action of your Government, so far as it went, especially since you state that it leaves at the disposal of the Local Governments in the aggregate the minimum balance which they are required to maintain. I must, however, express a hope that, in the new arrangements which will be made next year with the Local Governments, some means will be devised by which, in the case of emergency, they may be called upon to contribute a proportionate share towards meeting the necessities of the Empire, according to some established principle.

41. I must also point out that it has repeatedly been desired that a surplus of about 500,000*l.* may be provided in the Budget, and that one of 182,200*l.* is much smaller than is prudent. It was especially necessary this year to allow a larger margin of revenue over expenditure, inasmuch as your Government were engaged in hostile operations, the cost of which it was very difficult to estimate, and a further fall in exchange was only too probable.

42. The capital outlay not charged to Revenue shows an increase of 352,804*l.*, the provision for Railways being less by 169,526*l.*, and that for Irrigation Works greater by 80,630*l.*, while a charge of 441,700*l.* for special Defence Works at Bombay and Aden is included in the Budget for 1886-87. In the despatch of the 10th of December 1885, No. 367, it was agreed that, owing to the importance of rapidly completing the works already begun, especially those for the protection of the country against the risks of war or famine, the limit of 350 lakhs, which had been laid down as the maximum sum to be borrowed in any one year for the construction of Public Works, should be removed in the present year; and you were authorised to provide from loan as much as 456 lakhs for railways, irrigation, and defensive works, on the under-

[In these figures Exchange is included.]

	£
Sutlej Bridge . . . . .	239,550
Sind-Sagar Railway . . . . .	1,127,578
Sind-Pishin Railway . . . . .	1,081,816
Bolan Railway . . . . .	4,600
Kandahar reserve material . . . . .	188,800
„ „ rolling-stock . . . . .	486,400
Reserves:—	
Kwaja-Amran Extension . . . . .	200,000
Punjab Northern gradient improvements . . . . .	40,000
Sind-Pishin, Northern Section . . . . .	100,000
Crossing Amran to Frontier . . . . .	150,000
Bombay and Aden Defences . . . . .	441,700
	<u>4,060,444</u>

standing that all possible care would be taken that the outlay should not be allowed to exceed what might be absolutely requisite for these important purposes. The amount now shown in the Budget as expenditure not chargeable to Revenue is 5,868,800*l.*, which includes 651,700*l.* for Exchange, and an outlay of 749,000*l.* provided from the grant for the reduction of Debt. Omitting these two sums, the amount to be obtained by borrowing is shown to be

4,468,100*l.*,—that is, about 448 lakhs, or rather less than the sum sanctioned.

43. Of the total of 587 lakhs, no less a sum than 406 lakhs, as shown in the margin, is for works in connection with the scheme of frontier and coast defences. The allotments to railway construction, from all sources, amount to 547½ lakhs, as shown in the following table:—

	£
Capital outlay on State Railways:	
Charged to Revenue:	
Protective: construction . . . . .	500,000
„ interest on Indian Midland Railway capital . . . . .	138,700
Provincial . . . . .	109,200
Grant for reduction of Debt . . . . .	749,000
	<u>1,496,900</u>
Not charged to Revenue:	
Ordinary loan . . . . .	2,800,000
Special addition . . . . .	1,327,100
Exchange . . . . .	600,000
	<u>4,727,100</u>
Less provision from grant for reduction of Debt . . . . .	749,000
	<u>3,978,100</u>
TOTAL . . . . .	<u>5,475,000</u>

On other railways than those for the defence of the frontier, the principal outlay is expected to take place on the Punjab Northern system, the East

Indian, Eastern Bengal, Cuddapah-Nellore, and Bellary-Kistna Railways, and on the Lucknow-Sitapur-Kheri line, which is being constructed from Provincial revenues.

44. The total expenditure on the construction of Irrigation and Navigation Works, from revenue and loan, is estimated at 811,300*l.*, the chief outlay being on the Lower Ganges, Sirhind, Chenab, and Orissa Canals.

45. The allotment for Special Defence Works is 441,700*l.*, or, omitting exchange, 390,000*l.*, of which 155,000*l.* is to be spent in England, 85,000*l.* by the Bombay Government, 17,500*l.* in Lower Burma, and 132,500*l.* under the direct supervision of your Government. The difference between this sum of 39 lakhs and that of 54 lakhs named in the forecast which accompanied your letter of the 22nd of September 1885, No. 264, has been allotted to State Railways, and is included in the outlay thereon mentioned above.

46. The sum of 4,844,200*l.* set down as Capital charge involved in the Redemption of Liabilities is approximately the amount of India Three and a half per cent Stock, to be issued to those shareholders of the Scinde, Punjab, and Delhi Railway Company who prefer to receive it rather than an annuity, as communicated to you in my despatch of the 31st of March last, No. 28 (Railway).

47. I now come to the question of Ways and Means. According to the Revised Estimate for 1885-86, as corrected in respect of transactions in England,—

Ways and Means.		£
There was a deficit on the year's Revenue and Expenditure of . . . . .		2,852,404
The capital outlay on Railways and Irrigation Works not charged against Revenue, including the exchange thereon, was . . . . .		5,515,996
There was a further Capital charge involved in the Redemption of Liabilities, amounting to . . . . .		1,086,045
	£	
The balances were increased in England by . . . . .	2,474,589	
but reduced in India by . . . . .	138,600	
	<hr/>	2,335,989
		<hr/>
		11,790,434
	£	
On the other hand—		
Permanent Debt was raised in England, producing . . . . .	4,064,831	
but reduced in India by . . . . .	59,510	
	<hr/>	4,005,321
The Unfunded Debt raised in India was . . . . .	653,800	
but reduced in England . . . . .	30,712	
	<hr/>	623,088
The addition to the balances of Provincial Governments was . . . . .		113,900
There was received from the Commission for Reduction of Debt . . . . .		673,400
The net recoveries from Municipalities, Native States, &c., were . . . . .		100,500
The net receipts from Railway Companies were. . . . .		3,922,337
And the net amount of Deposits, Advances, &c., received was . . . . .		2,351,878
		<hr/>
		11,790,434
		<hr/>

48. In the Budget for 1886-87, the following are the figures :—

Capital outlay on Railways, Irrigation Works, and Special Defence Works, including the exchange thereon . . . . .	£ 5,868,800
Capital charge involved in Redemption of Liabilities . .	4,844,200
Withdrawals from the Provincial Balances . . . . .	975,400
Loans to Municipalities, Native States, &c. . . . .	897,600
Withdrawals of Capital by Railway Companies . . . . .	3,162,000
	<hr/>
	15,748,000

To meet this amount there are the following sums :—

Surplus of Revenue . . . . .	£ 182,200
	<hr/>
Permanent Debt to be incurred in England . . . . .	9,434,500
but discharged in India . . . . .	19,100
	<hr/>
	9,415,400
Unfunded Debt to be incurred in India . . . . .	478,200
Receipt from the Commission for Reduction of Debt . . . .	748,500
Other Deposits and Remittances . . . . .	825,000
	<hr/>
Reduction of balances in India . . . . .	1,784,500
and in England . . . . .	2,314,200
	<hr/>
	4,098,700
	<hr/>
	15,748,000

49. It thus appears that it is contemplated to spend in the current year 5,868,800*l.* on Public Works constructed by the State, 3,162,000*l.* on Railways undertaken by companies under a guarantee of interest, and 897,600*l.* on advances to Municipalities, &c., or altogether 9,928,400*l.* To meet this expenditure 748,500*l.* has been provided from the Famine Insurance grant, and 182,200*l.* by surplus of Revenue. Assuming, then, that the expectations of the Budget were to be fulfilled, it would follow that 8,997,700*l.* is being spent during the year from money obtained by borrowing in some form or other.

50. However important it is to develop the resources of the country, I cannot think it desirable, in present circumstances, that the credit of the State should be so largely used for promoting objects not of absolute or urgent necessity; and it is especially necessary to be cautious in incurring permanent liabilities, when borrowing in rupee securities is so difficult, and the continued fall in exchange has so greatly enhanced the burden of sterling obligations. In the tables which accompanied your letter of the 22nd of September 1885, No. 264, it was shown that after the year 1886-87 you proposed to limit the direct outlay by the State on the construction of railways and defensive works to 280 lakhs of borrowed money in each year (which, with the addition of exchange, may be taken as involving an actual outlay of about 340 lakhs), besides the amount that might be at your disposal from revenue or through refunds by private companies. I observe also that, so far as estimates have yet been sanctioned, it is anticipated that only 275 lakhs will remain unspent after the 31st of March 1887. Doubtless this sum may be somewhat increased, as in one or two cases the sanctioned outlay has already been exceeded; but, speaking generally, it appears that there ought to be no difficulty in keeping the estimate for next year within the authorised limit, and I request that the Budget may



be prepared accordingly. I also desire to point out that to expend on fresh undertakings refunds by companies of the cost of works constructed by the State from borrowed money is virtually to borrow and spend the amount over again; and that sums thus obtained must in future be applied in reduction of the authorised annual loan, and not as an addition to it.

51. As regards the current year, I have, in my telegram of the 19th of June, impressed on Your Excellency the urgent necessity for taking prompt steps to adjust the finances in such a manner as to secure an equilibrium of revenue and expenditure; and I have stated my inability to sanction further borrowing this year for Public Works. In your reply of the 30th of June, you referred to a partial suspension of the Famine Insurance as a possible mode of procuring the surplus which you admit to be essential, and you added that you did not propose any reduction of the expenditure on railways chargeable to Loan funds. You have, however, mentioned, in a telegram of the 29th of May, that an extension of the Burma State Railway to Mandalay was in contemplation; and I must repeat the remark made in my telegram of the 19th of June, that if such a work be inevitable, on which point I give no opinion at present, it is most important that the funds for it should, if possible, be found by the postponement of operations on other lines of railway, or of some other expenditure not equally urgent.

52. From this review of the financial position, I much regret to be forced to the conclusion that it is far from satisfactory, and that the prospective liabilities of various descriptions that must be contemplated give cause for anxiety as to the means of securing a proper balance of income and expenditure in the immediate future. The uncertainties of the exchange are such that it is impossible to frame any really trustworthy forecast of the burdens it may throw upon us; and, although the subject will continue to receive the serious consideration of the Secretary of State in Council, I am unable to see any present means of removing this difficulty, or of mitigating it. The obligation on Your Excellency's Government to enforce every practicable economy, and to avoid every fresh cause of expenditure that is not inevitable, is in these circumstances most pressing. I confidently trust, therefore, that your Government will be able, before the commencement of the next financial year, in reviewing your position, to find the means of preparing the Estimates for that year on a basis that shall bring the expenditure satisfactorily within the available income, and leave a substantial surplus, while the outlay of borrowed money is strictly limited to the amount which has been recognised as that beyond which this class of expenditure cannot be safely carried.

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Extract from the Proceedings of the Government of India in the Revenue and Agricultural Department (Famine).—Circular No. 57F.—11-1, dated 1st October 1886.

Read the following papers:—

Resolution of the Government of India in the Revenue and Agricultural Department, No. 44F., dated 9th June 1883, paragraph 24, and Chapter IV of the Provisional Famine Code.

Resolution of the Government of India in the Finance Department, No. 3353F., dated 30th September 1881 (Financial), paragraph 8, relating to the limits of Provincial responsibility for famine relief expenditure.

Letters from Government of India in the Public Works Department, to the Government of Bengal, Nos. 217 and 581 R.C., dated 14th March and 10th July 1884, relating to the commencement of a Railway between Mozufferpore and Sitamarhi as a Famine Relief Work.

Telegrams from the Government of India in the Revenue and Agricultural Department, to the Government of Madras, dated 28th January and 22nd September 1885, relating to the commencement of the earthwork for famine relief purposes on the Guntakul-Hindupur extension of the Bellary-Kistna Railway.

Telegram from the Government of India in the Public Works Department, to the Government of Bengal, dated 6th November 1884, authorising the commencement of earthwork on the Ranaghat-Bhugwangola Railway, if necessary for famine relief purposes.

Telegram from the Viceroy, to the Lieutenant-Governor of Bengal, dated 2nd October 1885, authorising resumption of work on the Ranaghat-Bhugwangola and Nagpur-Bengal Railways for famine relief purposes.

Circular from the Government of India in the Public Works Department, No. 17 (Railway), dated August 15th, 1883, pointing out that all railway projects must, under the orders of the Secretary of State, be submitted for previous sanction to the Government of India.

**RESOLUTION.**—Under the standing orders and codes relating to relief works in time of famine it is provided that a sanctioned programme of works suitable for relief shall be prepared and maintained by the Public Works Department, that the Local authorities may, in certain contingencies, authorise the commencement of "Professional Agency Works," and that the funds for relief expenditure shall, in the first instance and up to prescribed limits, be furnished from Provincial resources.

2. Doubts and difficulties having arisen in the practical application of these orders in the case of railways, His Excellency the Governor General in Council has been pleased to lay down the following instructions for general guidance:—

- (a) 1. Whenever it is considered that famine relief, suitable in kind and sufficient in proportion to justify the liability for the entire outlay, can be afforded by the construction of any railway, the necessary reconnaissances or surveys should be undertaken, and the alignment submitted to the Government of India in the Public Works Department for approval, before the project is finally entered in the sanctioned programme of relief works.
2. In the event of a railway which has not been so entered being unexpectedly deemed to be essential for relief during the actual prevalence of famine, full information as to the proposed alignment, together with all such other particulars as may at the time be available, should be submitted to the Government of India in the Department of Revenue and Agriculture, together with the report referred to in clause (b).
- (b) Whenever it is, in the opinion of the Local Government, necessary for famine relief to undertake work on any railway, a report should, previous to the commencement of operations, be submitted to the Government of India in the Department of Revenue and Agriculture describing the work, the nature and extent of relief which it is able and required to afford, the outlay contemplated, and the extent to which the Provincial resources can (if at all) contribute towards it, together with any other information which may bear upon the subject.
- (c) The Department of Revenue and Agriculture will communicate with the Financial and Public Works Departments of the Government of India, and eventually issue such order, sanctioning the commencement of operations or otherwise, as may be deemed advisable.

- (d) In the event of such sanction being accorded, the Local Government should transmit punctually and regularly to the Government of India in the Public Works Department the ordinary monthly and quarterly "Narrative Progress Report," together with a memorandum showing the maximum, minimum, and average number of labourers employed, and the total cash issues, during the month, and should also communicate with that Department upon all professional and engineering questions, and submit all the usual estimates, accounts, &c., as in the case of a railway in progress under ordinary circumstances.
- (e) Independently of the above, the Local Government should also transmit to the Government of India in the Revenue and Agricultural Department whatever returns and reports relating to the relief afforded by the work may be required under the rules and regulations for the time being in force.

Government of Madras.  
 " Bombay.  
 " Bengal.  
 " North-Western Provinces and Oudh.  
 " Punjab.  
 Chief Commissioner, Central Provinces.  
 " " Burma.  
 " " Assam  
 " " Coorg.  
 " " Ajmere.

Secretary for Berar.  
 Resident, Hyderabad.

ORDER.—Ordered that the above Resolution be communicated to the Local Governments and Administrations noted in the margin, for information and guidance.

Ordered also that copies be forwarded to the Foreign, Finance and Commerce, Home, and Public Works Departments, for information and record.

Extract, paragraphs 1 to 10, 12, 13, 15 (last clause), 22 (part), and 32, of a confidential Despatch from the Government of India, Military Department, to Her Majesty's Secretary of State for India,—No. 156, dated 4th October 1886.

Lord Randolph Churchill's Despatch No. 271, dated 15th October 1885, communicated the views of Her Majesty's Government regarding the measures to be taken for the defence of the North-West Frontier of India as proposed in our Military letter No 112 of the 10th July 1885. We desire now to report to Your Lordship the steps which have been taken in pursuance of those instructions.

2. With certain exceptions, Her Majesty's Government accepted our recommendations; stress was laid on the desirability of carrying them into effect as rapidly as possible; and the works in Pishin, at Sukkur, and at Multan were mentioned as those which should be the first to be put in hand.

3. It is to be observed that the proposals submitted by the Defence Committee last year, and adopted by us, were necessarily of a somewhat preliminary and tentative character, and that to bring them into a practical form it has been necessary to devote much time and labour to a minute investigation of the several measures, and a careful examination of the sites selected for the protective works.

4. In order to place Her Majesty's Government in possession of full information respecting the present state of this important question, we propose briefly to recapitulate the subheads of the general defensive scheme, indicating the conclusions arrived at and the action taken or contemplated, and then to advert to the points still calling for decision. The subdivision of the subject adopted in our previous letter will be adhered to.

In the map which accompanies this despatch will be found all the places mentioned in the following paragraphs.

5. Turning first to communications, we have to state that the new roads and railways sanctioned by the Secretary of State for India in 1884 are in active progress, and that there is every reason to anticipate their completion within the period originally calculated.

6. *Extension of Sind-Pishin Railway.*—The extensions and modifications of the general project advocated by the Defence Committee comprise, first, the prolongation of the Sind-Pishin Railway to some suitable point beyond the Amran Range, by means either of a tunnel or of a surface line which shall turn the range to the southward.

The question, which of these lines is most suitable, remains still undecided. An alternative alignment in the direction of Nushki has been reconnoitred to a certain extent, but a more complete survey may still be needed; projects for crossing the range *viâ* the Gwaja Pass and piercing it *viâ* the Sannal Pass have been prepared, and another for piercing it *viâ* the Kojak Pass is under preparation.

We shall submit the result of our further enquiries into this matter as soon as possible.

7. *Bolan Railway.*—The Defence Committee recommended the conversion of the temporary line through the Bolan into a permanent one, and their views were generally accepted by the Government of India, who, however, inclined to the opinion that an entirely new alignment might be found necessary in view of the liability of the present tract to injury from floods.

The proposal has been approved by the Secretary of State, provided that, on a further examination of the scheme, it be found practicable within a reasonable limit of cost. We understand that the project for a permanent Bolan Railway will soon be ready for our consideration.

8. *Road between Dera Ghazi Khan and Pishin.*—This road has already been sanctioned by Her Majesty's Government; it is merely necessary to remark that the needful steps are being taken to carry out the project.

The alignment of the entire length, except for a short distance between Rakni and Anambar, has now been decided on; the estimates are in a forward state, and work on a portion of the road has been put in hand.

As Your Lordship has already been informed in our despatch in the Public Works Department, No. 30 P. W., dated 18th June 1886, we have considered it necessary to construct a cross-road from Harnai to the new cantonment at Loralai in the Bori valley.

9. *Sind-Sagar Railway.*—The extension of the Sind-Sagar Railway to Mianwali, opposite Bannu, is being proceeded with rapidly. The conversion of the Salt Branch has been completed, and rails have been laid on 230 miles of the entire line, leaving 90 miles still to complete.

10. *Line across Rajputana desert.*—With respect to the scheme for constructing a cross line of railway to connect the Rajputana with the Indus Valley system, the preliminary survey of an alignment from Ajmere through Bikanir to Bahawalpur is now in progress.

\* \* \* \* \*

12. The last measure connected with communications, referred to in our previous letter as being under consideration, is the improvement of certain of the steep gradients of the North-Western Railway between Jhelum and Rawalpindi.

An estimate for this work, which we regard as of a pressing nature, is under preparation; we may remark here that, as the exceptional military traffic to be

provided for must necessarily run towards the frontier, only the gradients rising in that direction call urgently for improvement.

13. One work in this connection has not been previously mentioned, the bridging of the Chenab at Shere Shah, near Multan, on the branch of the Sind-Sagar Railway from Shere Shah to the Indus at Kareshi Ghât. It has hitherto been contemplated to arrange for the crossing of the Chenab at this point by means of a steam ferry. In view, however, of the inconvenience and delay likely to result from two breaks in the short line of communication between Multan and Dera Ghazi Khan, and in the absence of any serious engineering difficulty, we are of opinion that the desirability of bridging the Chenab should not be lost sight of, although the work is not looked upon as one of pressing urgency.

\* \* \* \* \*

15 (last clause). The importance in the event of hostilities of rapidly extending the North-Western Railway from Peshawar to Jumrood should not be lost sight of, but we do not ask for the immediate construction of this line.

\* \* \* \* \*

22 (part). As a part of the road already under construction connection Khushalgarh, Kohat, Bannu, and Dera Ismail Khan, we propose to include a short branch road from Laki to a point on the Indus nearly opposite the Mianwali station of the Sind-Sagar Railway.

Whether a convenient crossing can be made from this point to Mianwali direct, or a detour by Kalabagh would be preferable, is a question now under investigation.

Trans-Indus railway communication between Bannu and either Isa Kheyl or Kalabagh is recommended by the Commander-in-Chief; and although for the present a good road between these points will perhaps suffice, it may eventually be found desirable to adopt one of these two alternative alignments as a part of the Sind-Sagar Railway system.

It seems not impossible that the eventual extension of the Sind-Sagar line beyond Mianwali, so as to join the Rawalpindi-Khushalgarh branch of the North-Western system, may be found to be expedient.

\* \* \* \* \*

32. The following statement furnishes a comparison of the approximate cost of the works for the protection of the North-West Frontier as originally proposed, and as now recommended.

Expenditure on communications has not been included. The estimates of the cost of these roads, which, as stated in paragraph 25, will now be prepared, will be submitted hereafter for Your Lordship's consideration and orders. The expenditure on this account will be chargeable to Revenue.

	Proposals originally submitted by the Defence Committee.	Modified proposals now recommended for execution.
	£	£
Peshawar and Jumrood . . . . .	400,000	35,000
Landi Kotah . . . . .	30,000	30,000
Rawalpindi (arsenal) . . . . .	...	30,000
Togh . . . . .	...	30,000
Kohat . . . . .	50,000	25,000
Bannu . . . . .	70,000	25,000
Gomal . . . . .	70,000	...
Pishin . . . . .	450,000	450,000
Quetta (defences) . . . . .	20,000	20,000
Quetta (arsenals) . . . . .	50,000	50,000
Sukkur . . . . .	150,000	150,000
Bahawalpur . . . . .	100,000	15,000
Multan . . . . .	200,000	50,000
TOTALS . . . . .	1,500,000	910,000

The cost of the armament for the proposed works is not comprised in the preceding estimate. We believe, however, that, allowing for a suitable proportion of ammunition, it is not likely to exceed £150,000, raising the probable aggregate expenditure to £1,060,000.

No. 348 (Financial), dated 26th October 1886.

From—The Government of India,

To—The Secretary of State for India.

We have the honour to forward three Minutes, dated the 9th January 1886, the 14th March 1886, and the 25th June 1886, by our honourable colleagues Sir T. C. Hope and Sir A. Colvin on the financial principles to be followed by the Government of India in providing for Railway expenditure.

*Minute by the Hon. Sir T. C. Hope, K.C.S.I., C.I.E., dated 9th January 1886.*

		R	
Productive	:	13,21,400	
Frontier	:	8,79,000	
		22,00,400	

On the 4th December last the Secretary of State telegraphed that he estimated that the lapses on English outlay provided for railways in this year's Budget would amount to 22 lakhs of rupees. The Public Works Department thereupon requested the Financial Department to endeavour to make special arrangements to secure, for the coming year, lapses of English outlay, so that the programme of construction for that year might not be disarranged.

The Financial Department reply that they can do nothing to assure lapses, as they expect to find difficulty in providing even the year's grants, but that as these, in their turn, will probably not be worked up to, the matter will practically come all square in the end.

2. It would appear that the prejudicial effect of uncertain supplies of either materials or funds upon not only the speedy but the economical construction of our Indian railways is not fully appreciated in either England or India, and that it is supposed that one or other may, without prejudice, be turned on and off as readily as water from a tap.

3. As regards "materials," including rolling-stock, the procedure on the sanction of a project is carefully to consider the practicable rate of progress, and to adapt thereto both the indents for bridge-work, permanent-way, and stock, and the Indian programme of operations, together with the Budget allotments for both. If the Store Department are dilatory, as too often happens, and the materials arrive late, or not at all, in the course of the year, lapses in India or England, or both, are the necessary result. If these lapses are not re-granted, then, in the next year, either funds designated for construction must be diverted to pay for the materials, or indents for materials needed in that year under the programme must be thrown forward if possible, construction in full swing must be suspended, and the case may often happen, as this year, of material arriving, but there being no money even to pay its railway freight to destination. Worse than this, the non-arrival of material indispensable for one urgent work necessitates the withdrawal of similar material from another, thus causing expense in

transfer, besides disorganisation, or lapse of grant, in the latter. We thus get into a vicious circle; delay in indents disorganises work and causes lapses, which again react upon other indents and work, the only certainty being waste of time and money in one quarter or another.

4. When, however, uncertainty and variability in the annual grants themselves are superadded to uncertainty of stores-supply, the result is confusion worse confounded. This uncertainty may be illustrated by the following facts:—

- (a) In February 1884, provision in the Budget of 1884-85 of Rs68,88,000 of arrears of the Productive grant, which had accrued, was refused.
- (b) In May 1884, 45 lakhs were granted for the Sind-Pishin Railway.
- (c) In June 1884, 10 lakhs out of item (a) were granted.
- (d) In November 1884, another 5 lakhs were added to item (b).
- (e) In December 1884, 92 lakhs, including the balance of item (a), were granted.
- (f) In January 1885, 33 lakhs out of item (b) were withdrawn.
- (g) In February 1885, 51½ lakhs of lapses, which had inevitably accrued from such large grants at such a late period of the year, were allowed by the Financial Department, and distributed in the Budget of 1885-86.
- (h) On March 3rd, 1885, a forecast was sent to the Secretary of State, in which it was assumed that certain advances, amounting to 70 lakhs, would be refunded by companies, and available for outlay in the year.
- (i) On March 14th, 1885, these refunds were unexpectedly ruled not to be available, and operations on various lines were contracted in proportion. The Budget was finally framed on the above bases, and all executive arrangements were made accordingly.
- (j) In May 1885, 58½ lakhs were withdrawn from the Railway grants; the net reduction on Internal Railways being 44½ lakhs.
- (k) In June 1885, the Secretary of State disallowed the 51½ lakhs of item (g), but the reductions made in May rendered the enforcement of this in addition impossible.
- (l) In September 1885, Rs. 5,89,000 out of item (j) were re-granted, as the Secretary of State failed to make his share of the reductions comprised in that item.
- (m) Further re-grants of the undermentioned amount have also been made, to meet outlay already incurred on various lines, and to pay for the carriage of stores lying at Howrah for want of funds to convey them to their destination:—

	R
In July and August 1885 . . . . .	8,15,000
In September 1885 . . . . .	4,00,000

- (n) In October 1885, the Secretary of State granted 60 lakhs (Indian Midland refund), out of which 35 have been allotted to the Protective Railways which bore the bulk of the reductions—item (j).

- (o) In December 1885, the Secretary of State informed us of the lapse of the 22 lakhs which is referred to in paragraph 1.

5. I trust that the mere statement of the above facts will suffice to show the enormous difficulties under which this Department is called upon to work.

To accommodate executive operations to such ever-varying resources, and to utilise or to do without, as the case may be, materials supplied with irregularity which can never be foreseen, is a task which can, at best, be performed but imperfectly, and which is inevitably costly. But for the loyal support and unwearied vigilance of Colonel Filgate, R.E., the Accountant General in this Department, we should have fallen far short even of such measure of success as has been attained.

6. More serious than administrative difficulty is the waste involved in sudden contractions and expansions of work. The reductions of May last in Imperial and Provincial Public Works, for instance, have certainly cost more than the interest on temporary accommodation for a twelvemonth on the whole sum suspended would have amounted to. Large works, such as railways, cannot profitably be executed by dribbles. Once started, economy is best secured by keeping the establishments at their full working power, by supplying materials in a regular flow, at the times they are actually required, and by completing successive sections as an aid to the rest. Starting and stopping work from time to time spasmodically; suddenly discharging labour carefully collected and trained, and as suddenly endeavouring to re-collect it; keeping highly-paid staff partially or wholly unemployed for months; at one time sending out material which there are no funds for utilising, at another suspending field-work for want of material; and operating throughout on uncertain and fluctuating resources;—this is a mode of business which no mercantile firm could pursue with impunity, or would even contemplate seriously.

7. The waste and other evils attendant on such a system were long ago recognised, and provided against, to a certain extent, by the re-allotment of unspent balances, which became for some years the established practice. The

Government of India's No. 319 of October

2nd, 1879.

Secretary of State's No. 485 of December

11th, 1879.

Appendix No. 1, page 522.

Trevor, 1580-82.

Dickens, 3048, 3131, 3304.

Conway-Gordon, 3526.

Waterfield, 6104, 6183-5, 63209-21.

question came prominently before the Select Committee of the House of Commons on Indian Railways in 1884, and the evidence recorded by them, to which

references are given in the margin, led

them to include in their report the following recommendation:—

“29. The attention of your Committee has been called to the mischief occasioned by constant fluctuations of policy in the construction of railways, and they are of opinion that a careful forecast having been made of future requirements for public works over a considerable term of years, such a scale of expenditure upon railways should be adopted as can reasonably be maintained.”

8. Independently of the effects above mentioned, the system now in vogue obviously tends to reduce, on an average of years, the grant of 350 lakhs per annum from borrowed money, which was recently assigned for railways and irrigation. Such reduction must cause two evils—the grant, which has been somewhat pointedly announced to Chambers of Commerce and the public, in reply to their representations, will not be worked up to, and the completion of the works will be delayed beyond the time contemplated in the forecast. The importance of the latter evil may be measured by the following orders in the Secretary of State's Military Despatch, No. 271 of 15th October last:—

“2. With respect to the roads, railways, and bridges detailed in the 3rd paragraph of your letter and already sanctioned, I have only to express my earnest desire that they may be pressed forward with such energy as to ensure their completion within the period estimated by your Government,—*viz.*, the end of the year 1887-88.”



If materials are not punctually sent out as required, and if allotments fall short, and are also irregular, no energy on the part of this Department can avail to fulfil His Lordship's desires.

9. In bringing this case, with the foregoing remarks, to the notice of His Excellency the Viceroy, it is not my object to revive past controversies in detail, to renew complaint against delays of the Store Department already brought to notice, or to enter into the question of how far the irregularity and uncertainty of money grants which have prevailed were preventible. My sole desire is to promote such arrangements as shall ensure, as far as reasonably may be, that such evils shall not affect and nullify the new forecast, prepared in September last. This forecast I understand to have been generally approved of in the Secretary of State's Financial Despatch No. 367 of 10th December 1885, although His Lordship remarks that he does not deem it necessary to pronounce an opinion upon it for years subsequent to 1886-87, for which it is adopted, because "the rate at which progress can be made must be contingent on many circumstances on which no confident opinion can at present be formed."

10. To secure the prompt and regular supply of materials upon indents supported by allotment of funds, the co-operation of the Secretary of State alone is necessary, in simplifying the official routine at the India Office, and insisting on immediate attention to requisitions intimated as urgent, or for compliance within a specified date.

In order to provide funds as required, and to obviate entirely the difficulties regarding lapses, I would bring to notice a recommendation made by Colonel Filgate, R.E., the Accountant General in the Public Works Department, in 1883, that the whole amount required for the completion of the works in the programme should be secured by a single loan, to be paid up gradually by periodical calls at intervals fixed, as far as circumstances admitted, in general harmony with it. Such a loan would probably possess considerable attractions for certain classes of investors, while securing regular supplies on reasonable terms.

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*Minute by the HON. SIR A. COLVIN, K.C.S.I., on the alleged uncertainty of Railway Grants,—dated the 14th March 1886.*

The proposal put forward by the Honourable Mr. Hope is, so far as I can judge, identical in aim with similar proposals which have, on previous occasions been negatived. It seeks to secure for the Railway Department an annual supply of funds which shall be independent of our general financial requirements. The force of the objections previously taken seems to me to have greatly increased by the experience gained since they were made. The events of the last two years, in other words, have greatly strengthened the position that the supply of funds for our Railway needs is so bound up with the supply of funds for all other needs—that is to say, with our finances—that it cannot be treated independently.

2. The suggestions now put before us are, apparently, based on the assumption that we are to carry out the whole of the works in our programme within a given term of years. This assumption, if I rightly understand the matter, is incorrect; and in his last instructions the Secretary of State has declined to sanction any programme of annual work beyond that for the coming year. But, waiving this point, and assuming that we bound ourselves to take up a certain amount of loan every year and devote it to Railways, we should, in the

event of war or famine, or other strain on our resources, such as experience shows to be frequent, and such as we have every ground at the present time for believing imminent, find ourselves in very serious embarrassment. If, on the other hand, it was optional with us, not imperative, to take up the annual loan requirements, or if we might devote them in case of need to other than railway expenditure, we certainly should, if in difficulties, exercise our discretion as to the mode of their employment. I do not see, in such case, how the uncertainty complained of as to the supply of funds for railway constructions would be lessened. Loans floated, moreover, on conditions such as those contemplated would prove, in my opinion, very unfavourable to us.

I will not discuss the particular proposal now put before us at greater length, because, as I have said, the objections hitherto taken to the principle which it seeks to carry into practice, seem to me so fully confirmed by time and experience as to make further consideration, especially in our present financial circumstances, unnecessary. I wish to guard, however, against misconception which may be caused by what has been urged in regard to the uncertainty of supply which is put forward as the basis of the proposal. The illustrations given in this regard turn wholly on the operations of 1884 and 1885. In the first place, the sum of Rs68,88,000, claimed in 1884-85, which forms the subject of the first seven illustrations given, was not what might be understood by the expression "arrears of the Productive grant." It was not a lapse. It was the unforeseen outcome of a variety of account operations of past years, which resulted towards the close of the financial year 1883-84 in rendering it possible for this Department to place the above sum at the disposal of the Department of Public Works (assuming that funds were forthcoming) without violating the orders of the Secretary of State as to the limits of the annual expenditure permissible from Capital. No promise was made to the Public Works Department as to when this extraordinary grant would be given them; that Department, on the contrary, had every warning to arrange its operations on the assumption that the money would not be immediately forthcoming. When the Department of Public Works pressed us at the time the Budget for 1884-85 was being prepared to make an allotment for the whole amount in that year, we were unable to promise any portion of the money within 1884-85, and merely undertook to consider the question at a later date during that year, and to do what might then be found possible. The Department of Public Works were aware, from the first, that the grant of any portion of this extraordinary sum of 68½ lakhs during 1884-85 was extremely uncertain; and if they wished to secure certainty of supply they might have acted on this knowledge.\* Nothing in the proposal now put forward by the Honourable Mr. Hope would, I may add, by the way, have affected this particular item.

In regard to 1885, eight illustrations are given. In respect of the first two, the Government of India, in the Department of Public Works, had, in its anxiety possibly to push on work, assumed that certain companies would take up at once certain lines, and make certain consequent refunds in 1885—anticipations which, it was found when the estimates were being framed, could not be counted on, and the Public Works arrangements suffered accordingly. The

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\* I may note here that item (f) in paragraph 4 is erroneous. The 33 lakhs there mentioned were not withdrawn, but were transferred in our accounts from "Revenue" to "Capital." This transfer made no difference whatever in the actual expenditure of the Department of Public Works in 1884-85.

result, quoted as an illustration of uncertainty of supply, is, in my opinion, rather to be traced to a too sanguine view of possibilities taken in India.

The withdrawal of the grants referred to in May 1885, which furnish the next five instances, was due to the war preparations, and was part of the general economies in all departments enjoined at that critical time. This illustration, again, is, therefore, obviously inapplicable as an illustration of normal practice. The money was re-granted later in the year.

It will be seen, therefore, that the illustrations, both of 1884 and 1885, are drawn from wholly peculiar circumstances. To quote them as instances of the normal working of the departments, and to take them as the text for a new departure in financing our railways, seems to me inadmissible. Apart, however, from this, it is clear, as I have said, that if it was thought formerly undesirable to bind ourselves to a fixed annual expenditure for railways, it is much more so now, when we are struggling with increasing financial difficulties. The remedy at any time, even assuming that great uncertainty as to grant of lapses had existed, but certainly the remedy at the present time, seems to lie in a cautious and moderate programme of outlay on railways, which will make us less dependent on such grants as this, than in projects for making railway finance independent of the finances of the Empire. Such independence is, in my judgment, illusory.

I have shown what was the nature of the transactions in 1884 and 1885. I put up a tabulated statement, to which I beg special attention, showing the grants of lapses which have been made between 1880-81 and 1885-86. They are as follows :—

	£
1880-81 . . . . .	424,110
1881-82 . . . . .	306,912
1882-83 . . . . .	648,951
1883-84 . . . . .	1,505,700
1884-85 . . . . .	980,900*
1885-86 . . . . .	667,614†

So far as I am aware, in none of the four former years was there any difficulty about the re-grant of lapses. The exceptional circumstances connected with the grants of 1884-85 and 1885-86, which have been used as normal illustrations, have been explained by me in this note. I am not aware of other instances, except the 22 lakhs desired in the current year. Difficulty in providing funds has increased, as it might be expected to increase, with the execution of the policy of devoting annually larger sums than in previous years were judged needful to railway construction. It is a difficulty inseparable from that policy. It may suggest doubts, especially in the present condition of silver, as to the expediency of the policy, but it cannot be disposed of by seeking to establish distinctions between the financial requirements of the State as a whole, and the financial requirements of the Public Works as a Department of the State. Examination shows that our circumstances admit in practice of no such distinction :—

\* In addition to £688,800 granted towards the close of the year, though it was not, properly speaking, a lapse.

† The re-grants of the lapses in 1885-86 do not equal the total lapse of the previous year, because they were large special grants in 1885-86 which far exceeded the ungranted balance of the lapses.

## RAILWAY POLICY.

83

*Grants made to the Public Works Department under heads where lapses of one year are re-granted for expenditure in subsequent years, showing separately the re-grants made in each year from 1880-81 to 1885-86.*

	1880-81.		1881-82.		1882-83.		1883-84.		1884-85.		1885-86.	
	Lapses of previous year	Lapse on total grant for the year.	Lapses of previous year	Lapse on total grant for the year.	Lapses of previous year	Lapse on total grant for the year.	Lapses of previous year	Lapse on total grant for the year.	Lapses of previous year	Lapse on total grant for the year.	Lapses of previous year	Subsequent reductions on account of Military necessities.
Protective works	...	...	...	...	...	615,600*	615,600	455,900	455,900	54,800	37,800	...
Productive works	424,110	306,912	306,912	648,951	648,951	890,100	890,100	525,000	756,520	630,314	516,000†	
								688,800‡				

\* This large lapse is due to the refund of outlay on the Southern Mahratta Railway.

† This sum is the amount of outlay from Provincial Funds in previous years. It is not included in lapses shown in the earlier years.

‡ Exclusive of special grants for Frontier Railways.

*Further Minute by the HON. SIR THEODORE C. HOPE, K.C.S.I., C.I.E.,—dated the 25th June 1886.*

Noexception being taken by my honourable colleague Sir Auckland Colvin to my suggestions regarding a more prompt and regular compliance with indents, I trust that I have the advantage of his support in this matter.

2. In opposition to the plan for diminishing the present uncertainty of railway grants, I understand him to argue that (1) it is identical with previously negatived proposals seeking to establish a distinction between the financial requirements of the Public Works Department and those of the State as a whole; (2) that the illustrations given in support of it are unfair, being drawn from an exceptional and not a normal state of things; (3) that the old objections which caused such proposals to be negatived have been confirmed by the experience of the past two years, and the difficulty of finding funds has been enhanced by the policy of spending on railways larger annual sums than heretofore; (4) that the true remedy for such difficulties as there may be lies in a more cautious and moderate programme of railway outlay, involving less dependence on grants or lapses.

3. The first argument indicates, I venture to think, a misapprehension of the nature of my proposals. In 1883 I did, indeed, suggest that the Imperial Public Works Department should be placed on a quinquennial contract basis analogous to, and no more independent of the Imperial finances than, the contracts of Provincial Governments; and experience has confirmed me in the belief that such an arrangement would have conduced to greater efficiency and economy. But what I have now put forward is quite different, and simply amounts to this, that individual State Railways, or a group of such, should be dealt with, when actually sanctioned, just as railways conceded to companies under a guarantee are dealt with—that is to say, that they should be prosecuted to completion with such speed and regularity as is consistent with economy of construction, instead of spasmodically, with uncertain and often fluctuating resources—"a mode of business which no mercantile firm could pursue with impunity, or would even contemplate seriously."

4. I wish that I could flatter myself that, as is next pleaded, my illustrations are drawn from a wholly peculiar period. My honourable colleague's whole argument would seem to depend rather upon a principle under which they are justifiable, and must necessarily become normally repeated, according to the policy, the predilections, or the panic of the hour. If my present proposal is inadmissible, because regularity of grants is impossible under financial consideration as a whole, then my illustrations are appropriate, but of an irremediable evil. If, however, this be not so, and the intention is that railway grants shall normally, in the absence of political or financial cataclysm, be regular and reliable, then this proposal, providing effectively for the same intent, cannot reasonably be objected to.

5. As to the third argument, resting on the alleged experience of the past two years, I would affirm that the hand-to-mouth system of financial supply prevailing in the period has not proved economical in any sense, but wasteful, and that no real necessity for it existed. That money suddenly withdrawn was re-granted shortly is no mitigation or defence of the evil, but the reverse. Neither can a policy of larger annual railway grants be pleaded in extenuation, because such grants have been shown to be in theory, and found to be in practice, not materially larger than before.

6. The remedy suggested by my honourable colleague—a more cautious and moderate programme, less dependent on re-grants of lapses—does not seem to be either practical or applicable to the case.

How could the withdrawals possible under the hand-to-mouth system be discounted beforehand in the programme? Supposing we provided out of the annual loan grant an unallotted reserve to meet them, we should be raising money which could not be spent, and vastly increasing the lapses of which the Secretary of State formerly complained. Be the programme of outlay for the year large or small, it ought evidently to be worked up to as closely as possible. Lapses should be minimised, and my present proposal would do so; but to do away with them, or with the need for re-grants to counteract the mischief they cause, by any previous adaptation of programme, is impossible.

7. In the ninth paragraph of my note of the 9th January last I explained that it was not my object, in bringing this matter forward, “to revive past controversies in detail . . . , or to enter into the question of how far the irregularity and uncertainty of money grants which have prevailed were preventible.” The fact that grants have been uncertain being undeniable, it seemed to me that a proposal for rendering them less so in future might well be discussed *in vacuo*, and that such controversies possessed no necessary relevancy to it. As, however, my honourable colleague has judged otherwise, I presume that I have no alternative but to reply to the criticisms which he has advanced relating to certain items in the fourth paragraph of my previous note, and have accordingly done so in a memorandum appended.

These points of detail might be pursued further did I deem it necessary or profitable to do so. They do not, in my opinion, affect the main question.

8. The main question is simply this: Outlay on railways ought at all times, and especially in the present time of financial pressure, to be carried out as economically as possible, consistently with sound construction.

The term of years fixed in any programme for constructing one or more railways is simply the period in which the works once started can, with existing means, be most economically pushed to completion.

Loss of economy cannot but result whenever it becomes necessary to depart from such a programme, for the carrying out of which establishments have been formed, contracts entered into, and stores and labour collected: and departures *are* inevitable when the supply of funds is a matter of uncertainty. The most favourable condition under which railways can be constructed is when the capital required can be called up at will, so that the progress of work can be adapted to fit with economy the supply of labour and the fluctuations in the price of materials and in exchange. If progress be checked by want of adequate funds, capital already spent remains for a longer time unproductive, and in the end the State is burdened with a permanently increased charge in the shape of interest on the more expensively constructed work.

To set against this there is only the temporary deferment of a portion of the interest charge which must eventually be met.

It is evident, therefore, that financial loss, in cost of both works and establishment and in leaving expended capital unproductive, is caused by uncertainty and sudden curtailment of funds. This loss, which is equal to, if not often greater than, any temporary gain in interest arising from the non-supply of such funds, does not appear to be sufficiently appreciated in either England or India, though it was recognised by the Parliamentary Committee of 1884. No mercantile undertaking would be so worked as to incur it. It is a permanent loss to the finances of the Empire and should be recognised as

such, not treated as if it were a mere loss or grievance of the Public Works Department.

9. I readily recognise that Sir A. Colvin has done the best he saw his way to under the present system, and has re-granted lapses, or made what, in another sense, are new grants, when the state of his balances allowed. But what is wanted is a change of that system. Let all due consideration precede the commencement of a State Railway or group of such railways. But when commencement has been determined on, let suitable financial arrangements be made for the entire capital being raised and subsequently forthcoming from time to time, as required. The State pursues this course in respect of the undertakings of Guaranteed Railway Companies; why should it not do so in respect of its own?

October 18th, 1886.

T. C. HOPE.

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*Memorandum.*

*Item (a),* Rs. 68,88,000.—This item is quite correctly described. Several items had been debited by the Financial Department to the Productive grant which the Public Works Department considered ought, under the orders of the Secretary of State, to be otherwise dealt with. After lengthened discussion the view of the Public Works Department was recognised as correct. They had no reason to suppose that the decision would not be acted upon as in analogous previous cases, or that a new system, contrary to the principle hitherto recognised in the granting of lapses, would be introduced. They knew that there was no substantial reason why the money should not be raised as a part of the annual loan, and they had no special warning that the grant of the item was uncertain.

*Items (g) and (h).*—The anticipations of the Public Works Department cannot be ascribed with justice or accuracy as due to “a too sanguine view of possibilities taken in India.” In 1884 construction operations on the Bhopal-Cawnpore (now Indian Midland) and the Nagpore-Bengal Railway had been commenced, in anticipation of the cession of these lines to companies, under the formal sanction of the Secretary of State, and within the limits of grants approved by the Financial Department. The companies, when formed, were to refund the outlay thus advanced. On the 16th December 1884 the Secretary of State had telegraphed thus:—“Yours fifth. Negotiations in satisfactory progress with promoters, Bhopal-Cawnpore Railway, on basis of terms embodied in Southern Mahratta Railway contract. Negotiations with promoters, Nagpore-Bengal Railway, recently opened on the same basis.” Later private accounts confirmed these anticipations, and even as late as March 3rd, 1885, the Financial Department endorsed them by approving the forecast referred to in item (h) as sent to the Secretary of State, just as, only a month earlier, they had approved the distribution of lapses.

*Item (g).*—The Public Works Department had thus the highest authority for their expectations and arrangements, and the subsequent overthrow of both is a good illustration of the uncertainty of supply.

*Item (j).*—The statement that this withdrawal was due to war preparations in no way proves its unsuitability as an illustration of uncertainty of supply. The adoption of the precedent of 1878-79-80, when the normal grant was left untouched, would have been more economical than this withdrawal.

*Item (f).*—This item also is quite correct. The “Revenue” grant made in May 1885 was withdrawn to the extent of 33 lakhs. The fact that, owing to

the lapses necessarily resulting from the large grant (e) being made as late as December, the expenditure under it could be transferred to the head of "Capital," did not affect the alteration, and seems irrelevant.

Extract, paragraphs 1 to 5, 7, 8, 10 (last clause), 17, and 26, from a Despatch to the Government of India,—No. 24, dated 27th January 1887.

I have considered in Council your despatch, dated 4th October 1886, No. 156, reporting the steps which have been taken by your Government in connection with the defence of the North-West Frontier of India, and I now proceed to communicate to you the views of Her Majesty's Government on the subject. I forward a memorandum, drawn up by Colonel H. Schaw, R.E., Deputy Director of Fortifications, regarding the defence of the Pishin Frontier, which appears to me to contain very valuable suggestions.

2. I trust that no time will be lost in carrying out the surveys necessary to enable you to arrive at a satisfactory decision as to which line will be most suitable for the prolongation of the Sind-Pishin Railway, and as to whether a surface line or a tunnel will be the best means of crossing the Amran Range in the direction of Kandahar.

3. Having regard to the liability to injury by floods of portions of the present temporary line through the Bolan Pass, I am of opinion that no effort should be spared in order to complete the line *viâ* Harnai, and I am glad to observe that vigorous action has been maintained upon it.

At the same time the project for the permanent line through the Bolan Pass should be worked out as practicable.

4. It is satisfactory to find that the preparations for the road between Dera Ghazi Khan and Pishin are in a forward condition, and that a portion of the road has actually been commenced.

I have already sanctioned the construction of the cross-road from Harnai to the new cantonment in the Bori Valley at Loralai.

5. I await the preliminary survey which you state is now being prepared for a cross line of railway from Ajmere through Bikanir to Bahawalpur, to connect the Rajputana system with the Indus Valley system.

7. I authorise the improvement of the steep gradients of the North-Western Railway between Jhelum and Rawalpindi, and I trust that the work will be pushed forward as speedily as possible.

8. I agree as to the eventual expediency of bridging the Chenab at Shere Shah, near Multan, on the branch of the Sind-Sagar Railway from Shere Shah to the Indus at Kareshi Ghat, instead of relying on a steam ferry as the sole means of crossing the former river.

10 (last clause). The road between Peshawar and Landi Kotal must be kept in good order; and the importance of being able rapidly to extend the railway from Peshawar to Jumrud should be borne in mind.



17. I further sanction the construction of the short branch road from Lak to a point on the Indus opposite the Mianwali station of the Sind-Sagar Railway.

Defensive measures at Bannu.

I consider the recommendation of the Commander-in-Chief that Bannu be connected by rail with Isa Khel or Kalabagh is of great importance, and early enquiry should be made as to which of the two routes it is the more advisable to adopt.

\* \* \* \* \*

26. I find it difficult to accept as adequate the reasons you give for the delay which has taken place in carrying out the works previously sanctioned, and I desire to express the earnest hope of Her Majesty's Government that the measures to which sanction has been now accorded will be pushed forward to completion with the least possible delay.

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*Memorandum by COLONEL H. SCHAW, R.E., Deputy Director of Fortifications,—dated War Office, the 17th December 1886.*

Inspector-General of Fortifications,—

I have read carefully the reports by Major-General Sir C. M. MacGregor dated 9th November 1885, and that from the Indian Government, dated Simla, 4th October 1886. In both of these reports the necessity is recognised of holding the Amran Range, and there is perfect agreement as to the means to be adopted as regards the immediate defence of this advanced position. Both also agree in considering that the ultimate defence of the railway communications through the Bolan and Harnai Passes must be at the mouths of those passes at Baleraï, Darwaza, and Gurkhai, with a connecting line in rear of the inaccessible ridge of Takhatu, which covers the communication, and it is evident that the railway connecting these two lines should be in *rear*, instead of in front, of the Takhatu ridge, as recommended by Sir Charles MacGregor, and which, it is presumed, therefore, offers no physical difficulty of sufficient importance to prevent it.

The point on which a difference of opinion exists is as to whether the fortified position, or entrenched camp, should be at the Takhatu position or at the advanced position of Syud Hamid. Sir F. Roberts recommends the former; Sir C. MacGregor the latter.

In order that a judgment may be formed as to the comparative merits of the two positions, it is advisable that they should be considered under two aspects—

(a) Under the supposition that what appears to be our present policy in the event of war with Russia has been successfully carried out in its first step,—*viz.*, that a British army has advanced to Kandahar, and in the vicinity of that place has met a Russian army, and then that the British force has been defeated and has been forced to retire on Pishin.

(b) That, owing to causes which need not be considered here, the above policy has not been carried out, but that it has been decided to fight the Russians at Pishin.

Under the conditions assumed at (a), it would seem that a beaten army which had retreated through so difficult a country as that lying between Pishin and Kandahar would not be in a position to fight a successful defensive-offensive battle in such a position as that proposed at Syud Hamid, but that, after

deriving such succour as could be afforded by the garrison left at Pishin in holding the passes on the Amran Range, if forced to retire still farther, it would be obliged to take up a purely defensive position until reinforced largely from the rear and reorganised, and that consequently the Takhatu position would be better than the Syud Hamid position, which latter, although apparently well adapted for an offensive-defensive action by a large army, well disciplined, well commanded and in good heart, seems liable to be turned and enveloped, particularly by a turning movement round the right, which would endanger its communications. Such a turning movement is guarded against in Sir Charles MacGregor's proposal by works at the debouches of the passes to the north and east of Syud Hamid as far as Barshor and Bahzai.

It is evident that, if an enemy is sufficiently numerous and powerful to hold the troops at Syud Hamid in front, and to penetrate as far as Bahzai to their right rear, the position at the Syud Hamid would be no longer tenable. If such a turning movement cannot be checked at some point further to the west on the high ground north of Syud Hamid, it appears to me that in any case that position has a serious defect, and in the particular case now under consideration that of a beaten army, it would be inadmissible.

(b) Let us now consider the second case, that of an army holding the Amran Range as its first and outpost line against the Russian attack based on Kandahar. It is obvious that a sufficient body of troops must be at hand to reinforce the troops holding the passes of the Amran, and the positions at Gulistan and Kila Abdulla are apparently most suitable for this purpose, but, as before observed, it seems essential that the attempt to turn the right of this position by the Kadanai should be checked farther to the north-west than Barshor and Bahzai. This appears to be difficult, as the distance at Kadanai is very considerable, and a detached force there would, if attacked by superior forces, have a long and difficult retreat. Still this seems necessary to make the defence of the Amran position really strong, and if such an attempt were thus discovered and checked in time, no doubt a strong and most damaging flank attack from the Syud Hamid position could be made on an enemy committed to this movement; such an active attack appears to me much preferable to the proposed forts along the line Barshor to Bahzai.

To support the Gulistan-Kila Abdulla position a force would no doubt be collected at Syud Hamid, but I should be disposed to confine any permanent works which might be erected here to one covering the main bridge at this point. Field works could be quickly thrown up by an army occupying the position to strengthen it. Roads and bridges should, no doubt, be created in peace time, as proposed.

Under the above considerations, it seems to me that the principal permanent works should be on the Takhatu position, where in case of war the final stand must evidently be made, under whatever circumstances we may engage the Russians at Pishin. This position, although in some degree abnormal, owing to its being divided into two parts by the whole length of the Takhatu ridge, yet, if good rail and road communications be made, connecting the two positions in rear of this inaccessible ridge, it has the great advantage of obliging an enemy either to divide his forces by a very considerable distance if he attacks both positions, thus depriving himself of the power of reinforcing one wing at the expense of the other, or else of massing his attack on one of the positions under the observation of the defenders from the top of the ridge. The defenders could easily reinforce the wing attacked by means of their secure communications in rear of the ridge. For a purely defensive battle the Takhatu

has thus considerable advantages, and if the defenders were relatively strong enough they could also profit by the peculiarities of their position in making a counter-attack from the side which was less strongly attacked, all the advantage of observing the dispositions of the enemy being on their side.

It must be conceded, however, that in giving up the Syud Hamid position the advantage of water-supply is resigned to the enemy, and there may be sanitary reasons for preferring to hold the more advanced position. Under the supposition (*b*), I have no doubt any General would elect to fight as far forward as possible, but that supposition presupposes some equality in the numbers or powers of the contending armies, and in that case the less the British army is hampered by entrenchments the better. Under supposition (*a*) he would need all the aid that fortification can give him, both to resist direct attack and to preserve his communications, and such aid and security appears more easily and certainly to be attained in the more retired position.

I recognise even in this Takhatu position a serious risk of a strong and enterprising enemy passing round the right flank to Kach, and so gaining the Harnai Pass. Against this danger Sir C. MacGregor proposes to guard, in the case of the occupation of the Syud Hamid position, by the establishment of a fortified post at Balozai. Although this post seems too far in the rear of the Syud Hamid position to be a satisfactory solution of the difficulty in case the army were posted so far forward, yet if the army were in the Takhatu position, it would seem to offer a very valuable support to the right flank, and to guard, as well as any fixed defence can guard, against the attack on Kach.

The best safeguard, however, in such cases is undoubtedly a counterstroke, if the necessary force be available.

If the above views be considered sound,—and they are offered with very great diffidence in the absence of any personal knowledge of the ground,—it would follow that the defensive measures proposed by Sir C. MacGregor would be adopted as regards the defence of the Amran Range and the Gulistan-Kila Abdula position, immediately in rear of, and supporting the defence of, the passes, but that the fortification of the proposed entrenched camp at Syud Hamid should not be carried out by permanent works beyond whatever may be considered necessary to secure the passage of the Lora, while the main defence would be on the Takhatu position with a strong post at Balozai to guard against a turning movement to seize Kach.

To guard against a similar turning movement on the right flank of the advanced position, apparently it will be necessary to watch the roads from Kadanai, and how far any fortifications will assist in this duty I am unable to say.

I should imagine that an army advancing from Kandahar and firmly opposed at the Amran position ought to be beaten, and that any attempt to turn this position either by its right or left ought to be at once detected and met with sufficient force by an army in the Gulistan-Kila Abdulla position. A defeat here would no doubt mean destruction or a terrible disaster.

Should the Russian army be, however, proportionately so strong that it could hold the British army in front, and work round its flank to the rear of this advanced position, a retreat to the Takhatu position seems inevitable, and I do not see how an entrenched camp at Syud Hamid could be held for any length of time if its communications with India were in the possession of an enemy and, therefore, the construction of such entrenched camp would seem to me unadvisable.

As regards the nature of the works to be constructed, modern experience

appears to point to the following departures from the types suggested in the report by Sir C. MacGregor:—

1. The profile should not present any vertical wall to be breached by artillery, but only gentle earth slopes, on which artillery has no effect.
2. The obstacles may be ditches with escarps "*en glacis*," so as to be commanded by direct fire from the parapets, and well provided with accessory obstacles, such as iron pallsades, wire entanglements, and land mines. Counterscarps may be used if desirable.
3. For the complications of caponiers for flank defence may very generally be substituted direct defence of musketry and machine guns.
4. Bomb-proof shelter is most conveniently provided under barados, with gentle earth slopes which will deflect shells striking them.
5. Artillery may very frequently be mounted more conveniently and advantageously in open batteries of siege type (the guns firing "*en barbette*," or "overbank") than in enclosed works. The batteries may be most securely placed in positions retired between the infantry redoubts when the form of the ground permits of such a disposition.
6. The guns would command the distant approaches and converge their fire on those positions which would naturally be taken up by the attacking artillery.
7. For the actual defence of the redoubts, which form the tactical supports of the troops occupying the position, infantry and machine guns are most suitable.
8. In some cases, however, it is necessary to mount guns in redoubts, and in such cases it may be necessary to use flank defence, as direct defence from the parapets by musketry and machine guns becomes difficult, owing to the space taken up by the guns and traverses.
9. Traverses are now of little use to protect guns from enfilade, owing to the accurate high-angle fire of howitzers. They are useful between guns directly counter-battered, as they restrict the effect of bursting shells; but they should not form bonnettes higher than the parapet, as these mark the positions of the guns and catch and direct shells.
10. Enclosed works should be as narrow as possible in the direction of the enemy's fire. The deeper the work in this direction the better target it is for the enemy's artillery.
11. Direct musketry fire from trenches is the main element of passive defence and a clear field of fire is more important than obstacles.
12. An enclosed work, liable to attack on all sides by siege artillery and infantry, and which would give efficient cover to its garrison and be defensible against such an attack, is now an almost impossible problem. The more encircling the possible artillery attack, the more difficult is the task of the engineer. If the site be considerably elevated, and there be no high ground within artillery range, a fairly solution may be obtained by means of parados.
13. Field artillery giving full charges and giving a comparatively flat trajectory are much less formidable in the attack of entrenchments of any kind than howitzers, which throw their projectiles with curved trajectories, and so search out the interior of enclosed work. The effect of field artillery on earthen parapets with gentle slopes is quite insignificant.
14. In the case of detached works having no troops in support near them, and, therefore, liable to surprise at night, a well-flanked ditch appears still to be a necessity.

No. 58 (Financial), dated 10th February 1887.

From—The Secretary of State for India,

To—The Government of India.

Your Excellency's letter dated the 26th of October 1886, No. 348, forwarded Minutes by Sir Theodore Hope and Sir Auckland Colvin on the financial principles to be followed by your Government in providing for railway expenditure. In so doing, Your Excellency made no remarks on the subject, and asked for no opinion upon it; and I therefore consider it unnecessary to comment on the details of the discussion.

2. It is only necessary for me to observe generally that the responsibility rests with your Government, as a whole, for seeing that suitable arrangements are made for carrying on, in the most economical manner possible, the public works, sanctioned for the development of the country, both as regards the extent to which new projects should be entered upon and the appropriation of available funds to works in progress, subject to the limits prescribed and the rules laid down regarding expenditure on such objects, and specially to those

Despatches to India—

7th August 1884, No. 237 F., para. 39.

27th November 1884, No. 148 (Ry.), para.

10.

30th April 1885, No. 112 F., paras. 7, 8,

and 10.

27th August 1885, No. 239 F., para. 43.

general financial considerations which must always be paramount, and in reference to which the matured views of the Financial Member of your Council should obviously on all occasions carry special weight. I trust that the spirit of the instructions which have been from time to time given relative to the expenditure on public works, particularly in the despatches noted in the margin, will be cordially accepted by Your Excellency's Government, and enforced in all departments of service.

*Minute by the HON. SIR THEODORE HOPE, dated 21st April 1887.*

Secretary of State's Despatch No. 58 (Financial), dated 10th February 1887.

This despatch is up to a certain point quite satisfactory.

It remarks that "the responsibility rests with your Government as a whole for seeing" that public works are carried on in the most economical manner possible; and that in reference to financial considerations "the matured views of the Financial Member of your Council should obviously on all occasions carry special weight."

This is merely a recital of two well-known principles of the constitution of the Governor General in Council, *viz.*, that the responsibility for right action in any department rests ultimately with the whole Council, but that the views of the member in charge of each Department, be it Finance, Public Works, Military, Law, &c., should always carry special weight in matters concerning that department.

It further states that general financial considerations must always be paramount. This is indeed obvious, but its recognition is satisfactory in this case, because the loss to the general finances from the existing system of supply of funds and stores for Public Works was the basis of the suggestions in my Minutes for the substitution of a better one.

Having proceeded so far, however, the despatch ignores the loss in question and the suggestions made for removing it; it does not even allude to stores, and it enjoins, as regards funds, cordial acceptance and enforcement of certain past

orders which only bear indirectly on the proposition I had made, and tend to perpetuate the loss.

The fact of the loss on both counts is not, I believe, disputed, and could readily be established by overwhelming evidence if it were. In reference to it, "the matured views" of the Public Works Member of the Council which in such a matter "should obviously on all occasions carry special weight," have been put forward. I have now discharged my duty in the matter. The responsibility for the annual loss which is incurred cannot be laid upon my administration.

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*Minute by the HON. SIR A. COLVIN, dated 25th April 1887.*

The particular recommendations put forward in the Minute of the Honourable Department Public Works Member are, I understand, not accepted by Secretary of State; and I don't know that anything more is proposed to be done in the matter. The whole question of railway expenditure is under Secretary of State's immediate consideration, and I have recently expressed my views on the subject. I do not know precisely the object with which these papers are now circulated: whether, that is, for information or otherwise. I do not think it necessary, therefore, to note on this despatch, further than to say that I desire to be understood as maintaining the views recorded in my Minute of 14th March 1886, in which I can fully examine the several illustrations put forward in my honourable colleague's Minute in support of his proposals.

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*Minute by the HON. J. B. PEILE, dated 25th April 1887.*

I agree with Sir Theodore Hope that it is very desirable to obviate the waste caused by uncertainty of supply in the construction of railways by adopting the mode of procedure which he advocates at the end of his Minute of January 9th, 1886. When it is once decided that a railway can be undertaken, I do not see why there need be any obstacle in other financial requirements to providing the funds in that way.

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*Minute by the HON. LIEUT.-GENERAL G. CHESNEY, dated 30th April 1887.*

I have for long been of opinion that it is very desirable to introduce greater fixity of procedure into the mode of allotting funds to the Public Works Department, especially for railways; that such an arrangement would tend to economy, and that it might be carried out without inconvenience to the financial system. The army, the civil services, indeed almost every branch of the administration is carried on practically with fixed grants, and I have never heard of any sufficient reason why the same system should not be applied to railway administration. The inconvenience of the present system is only mitigated in part by the habit of re-granting lapses. Of course grants to the railway or any other department cannot be made quite absolute: the pledge of the Government of the day to give a fixed sum for a term of years could not be binding on the Government of the future, any more than a resolution of one Parliament can bind its successors. Ultimately the power which gives must always have also the

power to withhold; but it would be a great point gained if fixity and foreknowledge were to be the rule, and change and uncertainty the exception, and this I cannot but think to be quite practicable.

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*Minute by the HON. SIR THEODORE HOPE, dated 1st July 1887.*

I certainly do not read the despatch as either rejecting my recommendations or the reverse. His Lordship says:—"You have given no opinion, neither shall I; this being so, of course existing orders must be loyally followed." He adds some remarks of a general nature.

The object of my note of 21st April is pretty plain, I think. It was to say that as I had made definite proposals, met effectively [the criticisms on them, and pointed out the loss which a continuance of the present system entailed, I had discharged my duty, and freed myself from responsibility in the matter.

I am not called upon to say any more, unless it be in explanation of what I proposed.

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No. 47 (Financial), dated 22nd February 1887.

From—The Government of India,

To—The Secretary of State for India.

In continuation of our Despatch No. 7, dated the 4th January 1887, forwarding the six months' Estimates, and in reply to Your Lordship's telegram of the 11th January, we have now the honour to communicate to Your Lordship our views in respect of the expediency of imposing fresh taxation in the ensuing year, should our estimated expenditure be in excess of our revenue. With regard to the present year, we understand that Your Lordship concurs in our view, no taxation is necessary, and that we may agree to some deficit on the accounts.

2. We are not as yet in a position to say what will be the result of our estimates for the year 1887-88. These are now in course of preparation, and it is hazardous to express any definite opinion until they are more advanced. We are, however, informed by our colleague in the Financial Department that after taking credit for the temporary suspension of the Famine Insurance grant he does not, as at present informed, think it probable that, should we be able to take the rate of exchange at not less than  $17\frac{3}{4}d.$ , the deficit on next year's estimates will amount to a considerable figure. Your Lordship will observe from a perusal of a Minute accompanying this despatch that in the opinion of some of our number the exhibition of a deficit may be avoided. Reserving, however, this point for the present, and on the assumption even that the deficit proves larger than at present contemplated, we are nevertheless of opinion that to meet it by an addition to our taxes would be impolitic. The present difficulties of our financial position arise from the uncertainty attending exchange and the extra expenditure, whether Military or Civil, which we are compelled temporarily to incur in connection with the acquisition of Upper Burma. The first subject, which has been long before the Government of India, may be said now to have reached an acute stage. A Commission is sitting to enquire into questions of currency with especial reference to silver. We do not know what the recommendations of the Commission will be, but it may at least be expected that the decision taken upon them by Her Majesty's Government will, in one or other direction, have an important effect upon the silver market. It is probable, therefore, that during the course of the coming financial year we shall be better

informed than for some time past has been possible in regard to our prospects in respect of exchange. It is, then, premature at present to readjust our taxation on the assumption that the difficulties which now press upon us in this direction will necessarily become greater. We are opposed to taking at the present moment any action in the direction of further taxation so far as this class of difficulty is concerned; and we desire to await the outcome of the enquiries now being pursued upon the subject by the Royal Commission.

3. The same line of reasoning leads us to deprecate any increase of taxation on account of expenditure in Upper Burma. That expenditure, so far as it arises from the necessity of maintaining a considerably increased garrison in Upper Burma, will, there is every reason to suppose, prove of temporary duration. Without proposing to commit ourselves to any forecast in the matter, we think it not unreasonable to expect that, by the end of the ensuing financial year, a material further reduction of the garrison in Upper Burma may be effected. Similarly, for the moment, the revenue which we are receiving from Upper Burma is far below the standard which we may hope, apart from all further development of the country, to attain. The state of disorder still prevailing there prevents the due collection of revenue, but with the return of tranquillity it is to be expected that this difficulty will disappear. For some little time to come we shall doubtless be compelled to expend large sums in making roads and in constructing barracks, whether for the troops or for the police, and in other civil buildings; but these are charges of a nature imposed upon us temporarily by the circumstances in which we find ourselves engaged, and in no way lead us to anticipate excess of expenditure over revenue for any lengthened period. We are endeavouring, meanwhile, to strengthen our resources by the exercise of retrenchment and of economy in all directions where we find that these can be judiciously enforced. But at a time of temporary pressure, however desirable it may be to postpone expenditure which can be reasonably avoided, the imposition of taxes in India, in view of the peculiar conditions inseparable from our rule in this country, appears to us to be undesirable.

4. Experience has sufficiently shown that, apart from the difficulties which at present surround us, there is nothing in the state of our revenues which indicates the necessity of resorting to measures of taxation. If we compare with the time when we were in a state of equilibrium—such, for example, as the commencement of the year 1885-86—our present prospects, we find that our position now has been improved, in round figures, by £800,000 on account of income tax, by £1,000,000 by increased net railway receipts, by not less than £500,000 by reduction of expenditure, and by £1,250,000 by the suspension of the Famine Insurance grant, or in all, by £3,550,000. On the other hand, we must debit ourselves with £1,500,000 on account of increased Military expenditure in 1887-88 due to the carrying to completion the measures for strengthening our Military position in India, in accordance with the policy proposed by this Government and approved by Your Lordship's predecessors, with a further sum of £1,250,000 if we take the rate of exchange at  $17\frac{1}{2}d.$  for the ensuing year, with possibly not less than £700,000 on account of increased Military expenditure in Burma during 1887-88, and a net deficit of, say, £500,000 on the Civil expenditure in Upper Burma, in that year, or in all with £3,950,000. The deficit on these figures is £400,000, but, setting aside the special extra expenditure connected with Burma there would remain an excess of receipts over expenditure of £800,000. This, it may be observed, is based on the assumption of the suspension of the Famine Insurance grant; but that measure having been sanc-



tioned by Your Lordship may be taken into calculation when considering the question of taxation. In giving the above figures we are well aware that there are other questions, such as those connected with opium, for example, which may in course of time become of importance in estimating our revenues, and that disturbing elements might be found in other directions. But at present these have not assumed a form sufficiently definite to justify us in taking them into serious consideration. Viewing our financial position as a whole by the light of the above remarks, we think it may be conceded that any deficit which may be found to exist will be the result of temporary embarrassments, to which we may either expect within a comparatively brief period to put an end, or of a kind which it would be injudicious to reckon at present as an element of constant disturbance. We conceive that it will be more conformable to sound policy and to precedent to submit, if necessary, to a temporary deficit, using every endeavour to put an end to the circumstances which are causing exceptional expenditure, and exercising meanwhile a vigorous control over the financial administration of the rest of the country.

5. We have, however, to observe in this connection that one of Your Lordship's predecessors has recently repeated the expression of the wish that a considerable surplus should be provided in the estimates. In Lord Kimberley's despatch of the 29th July 1886 (paragraph 4) it is observed—"I must also point out that it has been repeatedly desired that a surplus of about £500,000 may be provided in the Budget, that the one of £182,200 is much smaller than is prudent." We are of opinion that while in normal circumstances a surplus of £500,000 or thereabouts may be desirable, it is not expedient at present, with especial reference to the position of the silver question, to budget for any such surplus. To do so would compel us to impose taxation which in the course of a few weeks may prove to have been unnecessary, in consequence of the oscillations of silver. We cannot, when the estimates are being prepared, frame any approximate calculation as to the amount which may be added to, or removed from, our expenditure by the course of exchange. We are now endeavouring to obtain from Her Majesty's Government their assent to the consideration of measures by which these sources of expenditures shall be rendered more liable to control. In the state of uncertainty in which we find ourselves we do not think it necessarily expedient that we should follow the rule which it would be desirable to adopt if the factors in our calculations were stable. The arguments which we have employed against taxation with a view to preventing deficit, appear to us *a fortiori* to apply to providing a surplus. Our efforts should, in our opinion, be to attain or to keep as near to equilibrium as we may, by the exercise of economy and of prudence, but to abstain, in the midst of an enquiry the practical issue of which we cannot at present foresee, from placing fresh burdens on the people, even though the result of such abstention should be the absence of a desirable surplus. Seeing that amongst the most disturbing elements in the matter of expenditure is the increased loss by exchange, we are of opinion that, before imposing fresh taxation with a view of obtaining a surplus of £500,000, we should at least await the outcome of the deliberations of the Royal Commission on silver.

6. We submit the above remarks to Your Lordship on the assumption that a deficit in 1887-88 is possibly unavoidable. It has, however, been proposed for the consideration of this Government by our honourable colleague Sir Theodore Hope that we should so arrange our estimates as to avoid deficit arising from increased expenditure in Upper Burma. The views of Sir Theodore Hope and

of His Excellency the Commander-in-Chief and Mr. Peile, who agree with him, will be found in Minutes which accompany this despatch. We are unable to concur in the recommendations which have been put before us by our honourable colleagues. The rule observed by us hitherto has been that unproductive outlay should ordinarily be charged to revenue; only productive works, the receipts of which will presumably repay interest on their construction, being debited to loan. In England, where unproductive works have been in the first instance charged to loan, the arrangement was justified upon the ground that the obligation would be entirely discharged out of the revenues of the country within a limited time—a condition which, under present circumstances, we are not in a position to assert is likely to be fulfilled, still less to definitely undertake to fulfil. Since the decision taken in 1869-70 that the construction of military barracks should in future be wholly charged against revenue, it has been the rule in India similarly to exhibit all analogous charges. The policy followed in this matter is in accordance with the principles laid down by Lord Kimberley in his despatch of the 27th November 1884, and Your Lordship will have observed that Lord Kimberley, among other matters, questioned, in paragraph 7 of that despatch, the propriety of charging against borrowed money the proposed outlay on military roads, and desired that they should be debited to revenue. It has, on the other hand, been decided to charge the defence works and frontier railways, now in course of construction, to Capital, and to exclude them from the expenditure charged against revenue. We observed that in 1878-79 the large expenditure on frontier railways was treated like other war charges and was charged against revenue, but we do not desire at present to question the expediency of the decision adopted in 1885. It may be considered that such charges as defence works or frontier railways which lie outside the limits of civil expenditure may, on that account, be separately dealt with, but the reasoning which may be held to apply to works of this nature does not, we think, extend to charges necessary to meet the requirements of civil expenditure. But, however this may be, we cannot admit that, in the case of the financial transactions of a State, capital expenditure, as such, should be neglected in making up the account of our revenue, and of the charges against it, though, in commercial transactions, where the object sought is to ascertain profit and loss, this must necessarily be done. We may exclude railways and canals which are calculated, in the nearer or more remote future, to bring in a revenue sufficient to meet the obligations created by present expenditure of capital; but in the case of roads and buildings and similar expenditure, we have no choice between meeting the charge out of current revenue or creating a charge upon future revenue; so that whether the existing revenue is, or is not, enough to meet the charges, we ought not, in our accounts, to represent them as if there were no obligation upon us to raise revenue, now or hereafter, to meet them.

7. We are all agreed that the expenditure necessary for Upper Burma must be incurred, from revenue if available, and if revenue is not available, from borrowed funds, and that Upper Burma must be supplied with the funds required for such expenditure. But while the majority of us are of opinion that, so far as our revenues are unable to meet expenditure necessary for Upper Burma within limits of any given year, the amount so required should be raised by loan, they dissent from the proposal that the balance of expenditure over revenue thereby arising should be charged otherwise than to the revenue account.

We do not think that a clear line can be drawn between the necessity for roads or civil buildings in Upper Burma, and for similar charges in Lower

Burma, or in the rest of India. If we were to charge in Upper Burma, otherwise than against revenue, items of expenditure which in the rest of India are charged to revenue, and even in Upper Burma itself to charge such items to loan only so far as is necessary to obtain equilibrium on our estimates, we think it evident that the arrangement would be open to the objection that we were subordinating an important principle of finance, to desire to exhibit favourable results. It is one thing to contribute from surplus revenues towards charges debitable to loan; but to secure budget equilibrium by transferring to our loan accounts charges otherwise debitable to revenue is a different matter. It is impossible, again, to say what is, and what is not, the normal scale of expenditure in Upper Burma, or to attempt to differentiate between the annual progressive requirements of the province hereafter and any extra sum which at present may be judged necessary. It cannot, for example, be said how much of the present charges for police are abnormal, and will be susceptible of reduction as the country becomes quiet, and what may be the proper charge on that account when the country settles down. As trade and population increase, civil police will probably be required in places where none are now needed, so that while there will be savings in some places there may be increased charges in others, and as the country develops there will no doubt be a constant demand for improved administrative arrangements in all departments. There seems to us to be no more substantial distinction involved in the proposal of our honourable colleague, than that of inability to meet the present charges in Upper Burma without showing a deficit—a principle which it will be impossible to introduce or satisfactorily to defend.

8. There is, moreover, the objection that the further we move in the direction of debiting charges connected with the administration of the country to loan, the greater become the chances of abuse. And the fact that in any instance we have departed from the practice hitherto observed appears a reason, not for advocating, but for refraining from, the continuance of such a procedure. The present proposals for debiting to loan charges so dissimilar as the extra cost of the Upper Burma garrison, the cost of roads for opening up the country, of barracks for police and of military barracks, as well as the cost of the public buildings, such as jails and court-houses, afford, in themselves, we think, an illustration of the risk of allowing ourselves latitude in this direction.

9. We are further of opinion that if any change is to be introduced into our system of accounts it should be done independently altogether of the difficulties of the moment. The exercise of any discretion as to the exclusion of items of expenditure from charges against revenue is at the best a very delicate matter, and no moment could be more ill-suited to the introduction of important modifications in this respect than that in which the Government finds itself exposed by maintenance of the existing practice to the inconvenience of admitting deficit. Even if, in such circumstances, an unbiassed conclusion could be formed, it would inevitably be received with distrust. The danger of raising doubts as to the accuracy or reliability of our estimates is greater than any danger likely to arise from the discredit attaching to this Government on account of deficit due to the expenditure necessary to meet the temporary requirements of a new province.

10. Apart, finally, from the risks of abuse in the exercise of discretion in the matter, it is to be objected that, in proportion as we remove from against revenue charges hitherto considered debitable thereto, and thereby create, or seem to create, surplus or equilibrium, we give facilities for the growth of expenditure in other directions which would have been checked by the necessities of our posi-

tion. We are therefore of opinion, in view of the above considerations, that the proposals of our honourable colleague are inadmissible, and that while we should do our best to reduce deficit, if deficit there is, to the narrowest limits we should not deny that deficit exists, or by a new arrangement of our accounts endeavour to obtain favourable results inconsistent with the practice hitherto followed.

11. It is proposed, also, that the decision recently arrived at should be reconsidered, by which the sums hitherto shown under Famine Insurance grant are for the present to be included in ordinary Revenue and Expenditure. The effect on our estimates of adopting this suggestion would be to increase the balance of our expenditure over our revenues by £1,250,000, an equivalent amount being written off no account of Upper Burma expenditure to loan. The objections which we have stated to debiting expenditure on Upper Burma preclude us from entertaining this proposal. In the presence of deficit, the Famine Insurance scheme, which assumes the existence of a surplus, becomes, it seems to us, inoperative, and we think that it is misleading and inexpedient to maintain it in our accounts, as though it were still in full vigour.

12. We now pass on to consider a recommendation which has been made to us by our honourable colleague Sir Auckland Colvin, that until our finances considerably improve, the prosecution of so much of the internal railway programme of 22nd September 1885 as has not yet been commenced should be postponed. He is willing to concur in the expediency of borrowing for the whole amount necessary to carry out the following year's programme, in view of the necessity of completing as rapidly as possible the works now in progress, and of making them contribute to our revenues. But he is willing to acquiesce in this step only if it is decided that our position in regard to the further prosecution of our scheme of famine railways be reviewed by the light of the circumstances of the present time. His views will be found in a Minute which accompanies this despatch.

13. Sir Auckland Colvin admits that, as regards their construction in 1887-88, there is no necessity for arriving at an immediate decision on the question of the prosecution of further internal railways. Moreover, no decision which we might now pass could bind Sir Auckland's successor, or even the continuing Members of the Council, when the time for a practical consideration of the question arrived twelve months hence. On the other hand, it appears certain that not one of the lines now in full progress and approaching completion could be stopped without producing waste rather than economy—to say nothing of the obvious political and other difficulties of such a course. We are therefore unable to concur in making the prosecution of these lines subject to the condition he proposes. At the same time, we see no objection to reviewing the question of completing the famine railway scheme by the light of the circumstances of the present time.

14. The case is put forward by Sir Auckland Colvin in the following terms :—

“(a) The proposals for Imperial capital expenditure on railways have risen in three years from 25½ millions to 39 millions, and nearly 1½ millions have been added for marine and frontier defences, making a total of about 40½ millions. If some unexplained excesses be added, the total is 42 millions. Out of this total, we are actually committed to about 26½ millions; the remaining obligation of which, about 12½ millions, is for internal lines, is “within			
<i>Internal Railways—</i>			
Completed . . . .	674,582		
State, in progress . . . .	4,266,667		
Companies, do. . . .	9,284,649		
<i>Frontier Railways—</i>			
In progress . . . .	8,320,553		
Mandalay . . . .	2,500,000		
<i>Marine and Frontier Defences</i>	1,410,000		
Carried forward . . . .	26,456,436		

Brought forward	26,456,436
Uncommenced Railways—	
Frontier	2,856,729
Internal	12,754,999
	42,068,164
Deduct—Excesses*	1,646,087
	<u>40,422,077</u>

our discretion" to undertake or not. As little less than one half of the original 25 millions must now be spent on either frontier railways or frontier and coast defences, from £250,000 to £350,000 of the interest on the outlay we are committed to will probably be a permanent charge, owing

to the unproductiveness of the works on which it has been spent.

"(b) We are now involved in deficit, exchange has fallen from 1s. 8d to 1s. 5½d., and threatens to fall lower; the fall in exchange enhances the weight of *all* existing old liabilities, not merely of those undertaken since the fall commenced; the large increase over the originally proposed 25½ millions of outlay is for works which will give little or no financial return; the suspension of the famine grant obliges us to put annually upon the market £1,250,000 more than hitherto; we are no longer contributing to unproductive capital expenditure from our current revenues, but are throwing the whole burden of that expenditure upon debt; and without taxation we have now no funds, and are not for some time likely to have funds, to meet the charge for interest on further railway construction.

"(c) The principle that the extension of internal railways should not involve additional taxation was laid down by the Government of India in the Policy Despatch of January 23rd, 1883; affirmed by the Parliamentary Committee of 1884; and reaffirmed by the Secretary of State in his despatch of 29th July 1886.

"(d) It is consequently now our duty, in order to assist our finances, to abstain from incurring further obligations, which the prosecution of the 12½ millions of uncommenced internal or famine railways, before there is a reasonable prospect of equilibrium, would entail. The question is not affected by the fact that a large part of the capital expenditure now in hand is for the frontier railways or defence works. What we have to look to is the total amount of obligation on account of capital expenditure on the one hand, to whatever object it may be devoted, and on the other to our financial resources. We may suspend work on famine railways with the less fear that we are running risks in the event of famine, and that great responsibility rests upon us in this regard, inasmuch as we must assume that the protective lines of which the construction was presumably the most urgent were those which were first put in hand, and as we shall be only acting up to our own utterances, and those of the Parliamentary Committee and the Secretary of State."

We will now comment upon the different points raised above in succession.

15. As to head (a), the marginal figures are sufficiently accurate for the purposes of this discussion, but we may point out, with respect to the weight of obligation, that in practice the maximum interest charge is never reached. The capital is only drawn out year by year as required, and before the whole is drawn, portions of each line are usually opened and afford a set-off in their receipts. The method of calculation recognised in ordinary cases is that which has been used in our Despatches No. 29 of 1883 and No. 27 of 1884, and elsewhere, and most recently in our Despatch No. 196R. of 26th June 1886, about the Nagpore-Bengal Railway. The case is not one where precise estimate is possible, but all calculations hitherto made for internal lines point to an average net burden of about two fifths of the maximum. On frontier lines the burden would, for some years at least, be much nearer the maximum.

16. To the statements in head (b) we must take two important exceptions—

That our deficit in the present and the coming year may be serious is unquestionable, but in the earlier paragraphs of this despatch we have explained, with our honourable colleague's full concurrence, that we do not expect it to be more than temporary, resulting from embarrassments either such as we may hope to put an end to within a comparatively brief period, or of a kind which

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\* We have not thought it worth while to show in detail the causes of excess, among which must be reckoned the new system of including exchange.

it would be injudicious to reckon at present as an element of constant disturbance. We shall strive to remove the causes of exceptional expenditure, and exercise a vigilant financial control over our administration generally. But we do not feel the present position to be such as to oblige us to decide now against obligations which will not (with one exception) begin to fall upon us till the year after next, and even then to only a limited degree.

Further, we do not consider that it can be said with accuracy that we are no longer contributing to unproductive capital expenditure from our revenues, but throwing the whole burden of it upon debt, and that without taxation we have no funds, and are not likely for some time to have any, to meet an interest

	Lakhs.	
Frontier strategic roads . . . . .	20	charge on further railway construction.
Famine grant-Irrigation . . . . .	11	It is shown in the margin that our re-
Telegraphs . . . . .	22	venues still bear above 50 lakhs of
	53	capital outlay in well-defined main
	—	items. Of these the Telegraph at least

are fairly productive. The Irrigation grant may be deemed hypothecated towards the interest of the Nagpore-Bengal Railway, under the sanction in Lord Randolph Churchill's Bspatch No. 367 (Financial) of 10th December 1885, but the other two items might be transferred to capital and met by loan at any time, so as to set free the amount required to meet the interest charge for uncommenced railways, and we should prefer drawing upon this source, as far as might be necessary, rather than such an extreme measure as stopping the uncommenced famine railways.

17. It may be objected, to both this transfer and the present increase of loan outlay generally, that there would be difficulty in borrowing such an additional amount. We would point out,

	Lakhs.	
Nagpore-Bengal . . . . .	85	however, that the railway refunds which,
Bellary-Kistna . . . . .	142	in pursuance of the suggestion con-
Cadappah-Nellore . . . . .	61	tained in paragraph 9 of our Despatch
K. . . . .	45	No. 264, dated 22nd September 1885,
Assam-Bihar . . . . .	280	may become successively available,
Sindhia . . . . .	95	amount to seven crores of rupees, as per
	708	margin.

18. Head (c) relates to past opinions that railway construction is not to be pushed on so as to involve extra taxation. We have just shown that to meet the interest charge of the uncommenced famine railways no extra taxation is needed. We have the funds, and our own recorded views, as well as those of high authority, justify our using them for this purpose.

Were this not so, however, we do not consider the opinions to which Sir Auckland Colvin refers to be at all conclusive on the point he seeks to establish. The despatch of 1883, in the part we have italicised, gives at best but a qualified

*"We should regard increased taxation as a greater evil than relatively slow progress in railway construction, more especially in the case of those railways which are not urgently required as a protection against famine."*

and hesitating voice in respect of railways which are urgently required for famine protection. The Parliamentary Committee of 1884 merely endorsed in

brief terms what the Government of India had said, and their remarks must be read in the light of the representations which had been made to them by certain witnesses that the Government of India contemplated a far larger railway extension than in fact they did contemplate. But, as regards both of these, it must be considered that financial circumstances have totally changed since those years. There was then so large a surplus that taxation was unnecessary for any reasonable extension, the call for frontier railways and defences had not developed, so

that the opinions then given are hardly applicable to the present state of things, when the frontier railways and defences have eaten up, as Sir Auckland Colvin remarks, a large share of the funds destined for famine protection. But one thing, true in 1883, does remain true still, that, as we said in our Despatch No. 264 of 22nd September 1885—

“the importance of this scheme (of internal railways to mitigate the severity of famines) increases with the lapse of time, since with each successive year the day inevitably draws nearer when famine will recur.”

The Members of Government of 1883, and of the Committee of 1884, might under present circumstances have come to very different conclusions. But we note that the Secretary of State, in July 1886, in the passage which Sir Auckland Colvin quotes, refers to a deficit “which does not arise from temporary causes”—to a deficit permanent, and therefore quite the opposite of what we all at present deem our possible future deficit to be.

19. Proceeding to head (*d*), we demur to the opinion that abstention from further obligations, in respect of these uncommenced famine railways, will “assist our finances.” When recently considering the case of certain Madras famine railways, which are among those it is now proposed to sacrifice, our attention was drawn to the fact that land in their locality thrown out of cultivation by the last famine (nearly ten years ago), still causes a loss of 5 lakhs a year of land revenue. The mortality of population and cattle which this implies may be inferred. That the loss occasioned by severe famine far exceeds the millions spent in actual relief, and continues for long periods, needs no demonstration. In view of the vast loss, immediate in capital and current in revenue, which a famine involves, we hold that the present circumstances, which make it prudent to enforce economy and to proceed with caution, should prompt us to resist the temptation to avoid an obligation which is not in reality onerous. The really small and temporary relief which the postponement of these famine railways would afford, would not, we submit, justify our embarking upon a venture so hazardous as that postponement involves.

20. We may observe that the responsibility which postponement would entail cannot be lightened by an assumption that the lines most urgent have been put in hand, or by reliance on the authority of the past opinions discussed in paragraph 18. The Bellary-Kistna and Kuddapah-Nellore Railways were necessarily commenced from the two deltas of supply; their extensions into the heart of the famine-stricken tracts, which are now in issue, could not but come later, though not less urgently required. Again, the protection of Orissa and the connection of Chhatisgarh with Northern India unavoidably waited on the construction of the Nagpore-Bengal trunk line. Not to proceed into detail further, the responsibility for famine protection cannot be minimised or explained away, and to neglect it may involve eventual derangement of the finances, as well as loss of life. This responsibility the Government of India have repeatedly acknowledged and dwelt on in their despatches to the Secretary of State. When the call for frontier railway supervened, our honourable colleague stood alone, in Lord Ripon's government, in giving only a qualified adhesion to the following opinion :—

“We have to provide against two evils—famine and complications on our North-West Frontier. Considering that the accepted famine cycle is near its close, most may well think the former the more likely to supervene; but it should not be forgotten that the best way of deferring the latter is to make timely preparation against them. The protection from both should certainly be provided concurrently, and to the full extent necessary in the case of each.”—(*Despatch No. 25 [Secret], dated 22nd September 1884, paragraph 12.*)

In harmony with this view, as far as circumstances permitted, our despatch of 22nd September 1885, No. 264, (Financial), contemplated constructing those famine and frontier railways for which funds were not immediately available by holding "primarily available for them . . . in such proportions as may appear at the time to be most convenient," the proceeds of refunds. This despatch was the result of most prolonged and detailed consideration; it had the concurrence of Sir Auckland Colvin, and we believe its general policy in this respect to be sound. Your Lordship has recently, in paragraph 50 of a despatch, No. 216 (Financial) of 29th July 1886, desired that refunds should in future be used in reduction of the annual loan, but we foresee considerable difficulty from time to time in carrying out such an application, especially when the uncommenced frontier railway come forward for construction.

21. Among the lines which it is proposed to sacrifice are comprised the Bilaspur-Sitarampur section of the Nagpore-Bengal Railway, and the connection of that project with the Indian Midland Railway. Regarding the former we would invite attention to your Financial Despatch No. 132 of 20th April 1886. Paragraph 5 contains the following passage:—

"From the above it will appear that we consider that the sanction of the project, so far from adding to our obligations, will tend to lighten them directly in more ways than one."

Exchange was then 1s. 5·812d.; it is now about the same, but with a rising rather than a falling general tendency, and the Secretary of State has just fixed 1s. 6d. as the official adjusting rate for the coming year. We cannot admit that such a line, being thus not only protective but productive and of high commercial value and expected "to lighten our obligations," is one the suspension of which would be appropriate at the present time.

The Bilaspur-Etawah line, connecting Chhatisgarh with Central and Northern India, is a necessary pendent of the Nagpore-Bengal, and already partly commenced by the Etawah-Saugor and Kutni-Umeria sections. The debt to the Famine grant, of interest for it, as well as for the Nagpore-Bengal Railway, was sanctioned in paragraph 16 of Secretary of State's Despatch No. 367 (Financial) of 10th December 1885. The hypothecation for the purpose of the Irrigation grant, referred to in paragraph 14, would therefore be quite legitimate.

	Miles.	Estimate, lakhs.	
I. Bellary-Kistna Railway (Hindupur Extension) . . . . .	111	75	
Chitrapur-Nilgiri Railway (Dharmavaram Extension) . . . . .	166	108	
Ditto (Pakal-Vilupuram Extension) . . . . .	135	86	209
II. Assam-Bihar Railway (Kaunia-Dhubri) . . . . .	55	64	
III. Panchpara (formerly Kontera) Pooree Railway . . . . .	235	218	
IV. Minor Famine Lines in Madras . . . . .	150	90	
	862	641	

The remainder of the lines which our honourable colleague would place under future suspension are shown in the margin, and ranged in the order in which they were placed in our programme of 22nd September 1885, together with the latest estimates of the cost. Between II and III, however, there is little to choose, and preference should depend upon opportunities for financing, and the offers of companies. The urgency of I is unquestionable, and the capital required comparatively moderate.

22. The result of our review of the question of completing the famine railways is that their suspension need not be discussed at present, as expenditure on their account (except as to a portion of the Nagpore-Bengal Railway) is not contemplated during the coming year; that the suspension at any time



would not assist the finances, but the reverse; and that we cannot be said to have no funds to meet the interest for their prosecution as long as our revenue account contains some 50 lakhs and upwards of main and well-defined items of capital outlay.

*Minute by the Hon. Sir Auckland Colvin, K.C.M.G., C.I.E., dated the 22nd February 1887.*

We are engaged in an effort to improve the condition of our finance by a searching enquiry into expenditure. The carrying out, however, of any economies which are practicable is, in my judgment, only a part of the measures which we may take to assist our finances. We may also abstain from incurring further obligations. The direction in which we have at present the heaviest accumulation of prospective obligations is in the construction of internal railways. It is desirable, therefore, to review briefly the successive phases through which the matter of railway construction has passed since 1883, and the extent to which capital expenditure has, since that date, been forced upon the Government, whether in connection with that or other objects.

I will commence with the despatch of 1884, in which the proposals put forward in 1883 were to a certain extent modified. In that despatch the following expenditure from Imperial Funds was contemplated:—

	£
Capital to be raised by the Government of India for direct construction and interest paid by it . . .	11,174,790
Capital to be raised by Construction and Working Companies—interest paid by Government of India . . .	2,100,000
Capital to be raised by Limited Guaranteed Companies—interest to be paid by Government of India . . .	12,060,000
<b>TOTAL</b> . . .	<b>25,334,790</b>

This, then, was the total capital expenditure in connection with Imperial Funds, to which in 1884 it was proposed to confine railway operations.

Taking the following railway figures from column 3 of the Schedule of the Public Works Estimate of Capital expenditure for 1887-88, a copy of which I append, and the Marine and Frontier Defence figures from our despatches to the Secretary of State, dated 22nd September 1885 and 4th October 1886, there have been added to the above:—

	£
(a) Marine Defences . £500,000	Frontier lines commenced . 8,320,558
Frontier „ . £910,600	„ „ proposed . 2,856,729
	Marine and Frontier Defence . 1,410,000 (a)
	<b>12,587,287</b>
Add—Burma-Mandalay Railway . . . . .	2,500,000
Inland Lines . . . . .	25,334,790
	<b>40,422,077</b>

Hence in three years the proposals before us for capital expenditure have increased by £15,087,287, or nearly 60 per cent.

Now, what has passed financially during those three years? The facts, though familiar to us all, cannot be too prominently borne in mind, or too vigorously insisted upon. When the projects of 1883 and 1884 were submitted, there was every prospect of surplus. Exchange was at 1s. 8d. The Famine Insurance grant was in full operation. At present we are involved in deficit. Exchange has fallen from 1s. 8d. to somewhere about 1s. 5½d., and threatens to fall at any moment lower; and we have been obliged to propose the suspension of the Famine Insurance grant. This latter measure, if we continue our present scale of expenditure, must alone involve an annual addition to our borrowings of £1,250,000, being the amount of the hitherto available contribution from that grant towards capital expenditure. We are no longer contributing to unproductive capital expenditure from our current revenues, but are throwing the whole burden of that expenditure upon debt.

Turning now to the obligations to which we are actually committed by works of all kinds in progress, we find that, in addition to the Kutni-Umeria, project (£454,562) and the Muzafferpur-Hajipur line (£220,000) which have been completed, and added to open lines, our obligations, in respect of railways actually in construction, amount to—

£	
4,069,992	Internal Railways in progress (including Umeria Colliery).
196,675	Internal Lines being made by Construction and Working Companies—interest paid by Government.
9,284,649	Internal Lines being made by Limited Guaranteed Companies (Indian Midland, £6,334,649; Nagpore-Bilaspur, £2,950,000).
8,320,558	Frontier Lines.
1,410,000	Frontier and Marine Defences.
2,500,000	Burma-Mandalay Railway.
<u>25,781,874</u>	

Hence, against a total expenditure of £25,334,790 contemplated in 1884 on account of Internal Railways, we are actually committed to the sum of £13,551,316; and we have completed works to the amount of £674,562, giving a total of £14,225,878; and on the basis of these figures we have a further sum of £11,180,912 to expend if we carry out the programme put before us in 1884. We have also, as above shown, to complete the expenditure of £8,320,558 for Frontier Lines; £1,410 for Defences; and £2,506,000 for Burma.

The following table shows how the internal railways in course of direct construction by the Government (in addition to the lines under construction by companies, *viz.*, the Indian Midland and Nagpore-Bilaspur Railways, aggregating £9,284,649), stand:—

	Estimate.	Spent.	To be spent 1887-88.	Balance.
	£	£	£	£
* Umeria Colliery . . .	60,000	56,592	20,000	...
Bellary-Kistna . . .	1,880,000	1,384,093	400,000	95,907
Cuddapah-Nellore . . .	608,782	547,342	55,000	6,440
Assam-Bihar (excepting extension from Kaunia to Dhubri) . . .	1,521,210	988,020	185,000	348,190
Bezwarra to the Frontier . .	196,675	100,000	96,675	...
<b>TOTAL</b> . . .	<u>4,266,667</u>	<u>3,076,047</u>	<u>756,675</u>	<u>450,537</u>

\* I take these figures from the Schedule. I do not know the cause of the proposed grant in 1887-88 over the estimate. The difference between the total in column 2 and the aggregate of columns 3, 4, 5, is due to this excess grant in 1887-88.

We have thus internal railways to the amount of £4,266,667+9,284,649 under construction, besides railways aggregating £674,562 completed; or £14,225,878 in all.

Internal Railways uncompleted.

The internal railways, on the other hand, which remain uncommenced, are—

		£
Government Construction.	Assam-Behar (Kaunia to Dhubri) . . . . .	640,000
	Hindupur Extension . . . . .	654,900
	Kadri Extension . . . . .	1,078,974
	Oamalchurla-Villupuram . . . . .	857,725
	Minor Famine Lines . . . . .	900,000
	Kontera-Pooree . . . . .	2,523,400
	Warora-Chanda . . . . .	350,900
		<hr/> 7,004,998
Companies.	Bilaspur-Etawah . . . . .	2,450,000
	Bilaspur-Sitarampur . . . . .	3,300,000
		<hr/> 5,750,000
GRAND TOTAL		<hr/> <u>12,754,999</u>

This figure differs somewhat from the balance previously worked out on the basis of deducting works completed or in progress from the original estimates, which would be £11,108,912. I presume the difference, which amounts to £1,646,087, is mainly due to excess on the figures of the original estimates.

In paragraph 4 of the first Railway Despatch, No. 29 of 23rd January 1883, the Government of India said:—

“Our Public Works policy must, of course, in a very great degree, depend upon our financial position. We need not at present describe that position at any length. We will only say that two points must at the present moment be borne especially in mind. The first is that our standard of value is unstable, and that the price of silver, on which its variations mainly depend, shows a downward tendency. The second is that the opium revenue is precarious and shows a tendency to diminish. Under these circumstances the Government should, in our opinion exercise caution in incurring any fresh liabilities. Great as the importance we attach to the speedy development of the railway system, we are not prepared to recommend, for the attainment of this object, the adoption of any measures which are likely to lead to an increase of taxation. We should regard increased taxation as a greater evil than relatively slow progress in Railway construction, more especially in the case of those railways which are not urgently required as a protection against famine.”

If it was thought necessary in 1883 to exercise caution in incurring fresh obligations, the difference in the financial position in 1883 and 1887 makes the necessity for such caution greater at present. It must be remembered that, in addition to the projects and calculations which I have enumerated above, we may be compelled to undertake, in addition to the £25,781,784 to which, as I have already stated, we are committed, expenditure which will certainly not be less, and which in my opinion will be considerably more than £2,856,729 for Frontier Lines, contemplated but not yet commenced. It is thus probable that, burdened as we are by deficit, and by a rapid fall in exchange, and deprived of the Famine Insurance grant, we shall be called on to incur an expenditure considerably in excess of the total of twenty-five millions originally proposed. But whereas much of the twenty-five millions then proposed would have at least brought in a return equivalent to the interest of the capital expended, little less than one half of it must now be spent either on frontier railways, of which the financial results will be most doubtful, or in frontier

defences and marine defences, on which the financial results will be *nil*. It is, I fear, only too probable that quite apart from protective or frontier lines not yet commenced, between £250,000 and £350,000 will be added to our estimates as a permanent charge for the unproductive capital which has been or will be sunk in works of the nature referred to.

We are all agreed that taxation should not be resorted to, and in the despatch

\* "Your Committee wish most emphatically to endorse the declaration of the Government of India made by Major Conway-Gordon and Mr. Westland, that the proposed extension of railways should not involve additional taxation (para. 34, Committee's Report).

which I have quoted, as in the Report\* of the Railway Parliamentary Enquiry, it was insisted on as a condition of the internal railway scheme that taxation should not be had recourse to in order

to find funds for it. But without taxation we now have no funds, and we are not for some time likely to have funds to meet the charge for interest on further railway construction. If we do not resort to taxation, it is only because of two evils we prefer deficit. It follows necessarily, in my opinion, that the prosecution of so much of the internal scheme of railways as has not been yet commenced, if we are to act in accordance with our own declarations and with the sanction under which we are acting, must be for the present postponed. This applies not only to railways constructed directly by Government, but to those made by Limited Guarantee Companies. In either case the increase of obligation is within our discretion. It might possibly be urged that, as we have laid out so much unproductive capital, we should endeavour to recoup ourselves by completing our scheme, and by making railways which may prove productive. But the scheme is protective, not necessarily productive; and in the next place we have no means of meeting interest during construction. In the circumstances in which we find ourselves, and in view of our own declarations and those of the Parliamentary Committee, I am unable to concur in the propriety of the further prosecution of our protective railways, until our financial circumstances are again in a reasonably assured condition of equilibrium. I consider that the fact that we are now in a condition of deficit, suspends, *ipso facto*, and as the inevitable consequence of the conditions which this Government has itself laid down, and with which it is therefore bound to comply, all proposals and programmes for the present prosecution of further internal railways. It has no longer to be shown why the construction of these railways should be suspended, but why it should be proceeded with.

I have already, in my Minute of 8th June 1886 on the Nagpore-Bengal Railway project, expressed my conviction that the time had come when we must reconsider the expediency of going on with the project of Public Works put before the Government in 1883, 1884, and 1885. I said—

"It is, therefore, unquestionable to me that to proceed with the Nagpore-Bengal

View expressed in my Minute of June 8th, 1886.

Railway at present is in direct opposition to our declared policy, which we have seen endorsed by the Parliamentary Committee. The position is not affected by the

contention that for the next five years we shall have to pay comparatively small amounts on account of our guarantee to that Railway. The policy put forward in 1884 assumed a state of financial equilibrium, in which surplus funds may reasonably be believed to be available to meet interest on the various projects embodied in the scheme put forward by this Government. This is not our position in 1886, though in 1883 and 1884 it appeared to be so. The same reasoning, it will be urged, applies to every project embodied in the Railway proposals admitted to that Committee. It does. I am not now called upon to pronounce definitely in regard to other projects. But I avail myself of the opportunity which has been thus afforded me of recording my opinion that the point of view at which, from the course of events during the last

eight weeks, I am now obliged to place myself, is opposed to the prosecution, until our financial position is re-established, of any railways (the Upper Burma Railway apart) other than those in the active construction of which we are at the present moment positively engaged."

In this view the Secretary of State, in his despatch of 29th July 1886, entirely concurred. He wrote—

"I cannot think that these observations weaken the force of Sir Auckland Colvin's Despatch of the Secretary of State, 29th July 1886. argument that it was an essential condition of the Government of India's programme for the construction of internal railways, not merely that the lines selected should in the long run be profitable, but that their construction should not involve additional taxation, and that the liabilities they created should be met by the surplus revenue. To proceed with fresh lines, or extensions of existing lines, at a time when a deficit, which does not arise from temporary causes, is impending, is to court the necessity for further taxation. The amount of such taxation would have to be increased, either in order to pay the interest guaranteed on the capital till the revenues of the line are sufficient to meet the charges, or, if for the present the deficit be met by borrowing, to defray the interest on the loan which will eventually have to be raised for the purpose of meeting it."

The question is not affected from my point of view by the fact that a large part of the capital expenditure which we now have on hand is for frontier railways or for defence works. What we have to look to is, on the one hand, the total amount of obligations on account of capital expenditure undertaken by the Government of India, to whatever object it may be devoted, and, on the other, the financial resources of that Government. The fact that of the twenty-five millions under contemplation, little less than one half is to be devoted to objects even less remunerative than protective railways, is an additional reason for suspending for the present further loans on account of capital expenditure on internal railways. It must also be remembered that since the fall in silver, the burden of interest on capital expended in the construction of railways in 1884, 1885, and 1886 will be proportionately heavier on the Government. For every £100 borrowed, for example, in 1884, we have now to pay interest not at 1s. 8d. the rupee, the rate then prevailing, but (at the most favourable rate) at 1s. 5½d. the rupee. I drew especial attention to this in my Minute with regard to the Nagpore-Bengal scheme—

"Assuming that if the capital is raised when the rate of exchange is 1s. 5d., the total amount required is £3,600,000 true sterling, a fall in the rate of the exchange to 1s. 4d. will increase the annual interest charge by £1,27,000. This, in itself, may not seem very considerable; but the burden of the whole of our already existing old liabilities would be simultaneously raised by the fall from 1s. 5d. to 1s. 4d. in the same proportion."

The Secretary of State, in his despatch of July 29, 1886, commenting on the above passage, writes—

"It is not merely the fall which has already occurred that constitutes the difficulty, but the instability of the value of the rupee, and the further fall which there is too much reason to fear may be anticipated. A sterling guarantee given a few years ago, which, if exchange had not fallen, would have been discharged by net earnings equal to 4 per cent. on the capital outlay, even now requires more than 4½ per cent. of net earnings to meet it, and it seems not unlikely that the percentage may be further increased; and this would happen simultaneously with a corresponding increase of the charge arising from all the other remittances to meet Home expenditure."

So long as it was a question of projects actually in construction, or as long as there were reasonable hopes of equilibrium, I have remained of opinion that it would be impolitic to suspend works. Hence I have always been opposed to all suggestions to stop work on the Madras Railways in order to find money for the Mandalay Railway, or to closing work on those railways because the frontier railways were forced upon us. For the same reasons I agreed in commencing operations on the Indian Midland Railway, and to a modified form of the Nagpore-Bengal Railway; though in the latter case, except for special reasons which I need not repeat here, I should have been unable to give my adhesion. For the same reasons, I have also hitherto been opposed to suspending the action of the Famine Insurance grant. It has always seemed to me impossible that, unless under stress of actual deficit, we should postpone execution of the recommendations of the Famine Commission and the Parliamentary Committee. The motives which have actuated me are those expressed in our Despatch No. 275, dated 6th October 1885 (paragraph 19):—

“We judge it more prudent to confine ourselves at present to the circumstances with which we have immediately to deal, leaving to a later period the consideration of the steps to be taken, should unforeseen difficulties increase upon us.”

That latter period seems to me to have arrived. Difficulties, since those words were written, have increased upon us. The internal works in active course of construction are, on the other hand, now drawing to a close, and I must therefore repeat and record my opinion that, unless the Secretary of State, on a review of the whole position by the light of our financial prospects, judges otherwise, no further obligations should at present be undertaken by Government in respect of the construction of internal railways. Thus, for example, capital expenditure on construction in 1888-89 would be limited to providing for the internal lines, the £450,537 balance remaining to be spent at the end of 1887-88, and to the sums required for the Mandalay and Frontier Railways.

I am aware that, so far as concerns their construction in the course of 1887-88, there is no necessity for arriving at an immediate decision on the question of the prosecution of further internal railways. We are not, I believe, divided in opinion as to the course to be adopted next year. But it is of importance that we should bring to the notice of the Secretary of State the fact that we are even at this present moment engaged in the prosecution of the scheme of famine railways on conditions other than those contemplated by ourselves and by the Parliamentary Committee, when we asked and obtained their sanction to that scheme. It is of importance also that those who are responsible for the finances of the Government should, so far as is possible, be placed in possession of all facts likely to affect future expenditure. The Secretary of State has declined to sanction the programme submitted to him with our despatch of 22nd September 1885, and has restricted his sanction to the current year. Our proposals for 1887-88 have now to be submitted to him, involving, as they must, borrowing for that year to an amount considerably in excess of our requirements hitherto, in consequence of the suspension of the contribution of 125 lakhs hitherto received from the Famine Insurance grant. I am willing to concur in the expediency of borrowing for the whole amount necessary to carry out the following year's programme, in view of the necessity of completing as rapidly as possible the works now in progress, and of making them contribute to our revenues. But I am willing to acquiesce in this step

only if it is decided that our position in regard to the further prosecution of our scheme of famine railways be reviewed by the light of the circumstances of the present time.

It will be objected that in proposing to curtail the operations contained in our programme of 1883 and 1884 we are running risks in the event of famine, and that a great responsibility rests upon us in this regard. We must, however, in the first place, assume that the protective lines of which the construction was presumably the most urgent were those which were first put in hand.

<i>Lines begun.</i>		Mileage.
1. Katni-Umeria Colliery . . .		37
2. Bellary-Kistna . . .		279
3. Cuddapah-Nellore . . .		83
4. Assam-Bihar, Dinapore to Nathpur, with branch to Mamharia . . .		180
5. Bezwara to Frootier . . .		32
6. Indian Midland . . .		610
7. Nagpur-Bilaspur (110 miles of this now laid down in narrow gauge, will be replaced by broad gauge) . . .		259
		<hr/> 1,480

<i>Lines not begun.</i>		
1. Assam-Bihar (Kannia-Dhubri) . . .		55
2. Hindupur Extension . . .		111
3. Kadir Extension . . .		166
4. Damalchera-Villapuram (now Pakal Villapuram) . . .		135
5. Minor Famine Lines . . .		150
6. Kontera Pooree . . .		235
7. Warora-Chanda . . .		35
8. Bilaspur-Etawah . . .		274
9. Bilaspur-Sitarampur . . .		365
		<hr/> 1,675
<b>GRAND TOTAL</b> . . .		<hr/> <b>3,055</b> <hr/>

By the completion of the lines now sanctioned we shall have added 1,480 miles of the most necessary protective railways out of a total contemplated mileage of 3,055. The Warora-Chanda, though not yet begun, is a line which, by our agreement with the Nizam's Railway Company, we may be called on at any time to construct. Deducting this line from "Lines not begun" of the 1,540 remaining, 55 miles belong to the Dhubri extension of the Assam-Bihar line, 235 to the Kontera-Pooree, and 365 to the section of the Nagpore-Bengal line, between Bilaspur and Burakur; or 655 in all. I do not propose here to criticise the urgency of the Dhubri extension of the Assam-Bihar line, or of the Kontera-Pooree and Bilaspur-Sitarampur lines. But, if I am reminded of the risks and responsibilities

which we incur by suspending our programme of internal railway construction, I must recall the condition of assent which the Parliamentary Committee, accepting the formula of the Government of India itself, adopted,—*viz.*, that the carrying out of the programme put before it was not to be proceeded with if it involved taxation. We know that as it is we are in deficit, and that any further obligation must add to that deficit. If, therefore, we continue the programme of 1884, we can only escape the necessity of taxation by adding to our deficit; and this is entirely opposed both to the spirit of the assurances given by the Government of India in its despatch of 1883 and of the declaration of the Parliamentary Committee. I quote in corroboration of this view the Secretary of State's despatch of July 1886 above referred to:

"While I do not in the least overlook the importance of extending the railway system in India, both for the purpose of providing additional means for protecting the country against famine, and for developing its resources, I must impress upon your Government that even these unquestionable advantages may be too dearly bought, if you are compelled, in order to meet your expenditure, to resort to increased taxation.

"It is most especially needful to incur no new obligations for public works, which are not really unavoidable, at a time when you are committed to heavy expenditure for the improvement of your North-Western Frontier communications, which, for military and political reasons, cannot be postponed, and when, moreover, it is probable that a large further outlay will be necessary for the construction of railways in Burma. Measures, which seemed highly desirable when there was a fair prospect of

a surplus of revenue over expenditure, must be suspended in the changed condition that has arisen ; and I entirely concur in Sir Auckland Colvin's opinion, that 'our great aim should now be to reconcile, as far as in the present state of silver we may, financial equilibrium with the heavy defence expenditure which has been forced upon us.' "

I trust that the views contained in this Minute will, with the permission of His Excellency the Viceroy, be laid before Her Majesty's Secretary of State, with the expression of my opinion that, unless our finances considerably improve, it is undesirable at present to continue the prosecution of the programme proposed in 1883, 1884, and 1885.

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*Present position compared*

PROJECTS.		ESTIMATE.		EXPEN
As in Forecast.	Sections as now arranged for administrative purposes.	As in Forecast.	Present.	To end of 1885-86.
		₹	₹	₹
<b>FRONTIER RAILWAYS—IN PROGRESS.</b>				
Sind-Pishin . . .	Nari-Quetta . . .	2,50,00,000	3,60,33,568	2,30,74,942
	{ Bostan-Shebo . . . } { Shebo-Gullistan . . . } Killa Abdulla Branch . .	2,65,00,000 { 15,00,000 } 20,00,000	{ 131,07,684 14,83,516	1,28,045 ...
Durwaza-Quetta . .	Durwaza-Quetta . . .	23,00,000	\$127,22,940	4,65,412
Kandahar Reserve Permanent-way.	Kandahar Reserve Permanent-way (185 miles) B.	61,50,000	28,25,000	18,91,538
Reserve Locomotives .	Reserve Locomotives . .	14,00,000	40,27,000	12,218
	Rolling-stock ordered for extensions B.	...		
	Further requirements to complete Frontier Railway system B.	...	*21,10,000	...
Sind-Sagar . . .	Sind-Sagar—Western Section. ,, Eastern Section	2,30,00,000	{ 2,13,30,206 23,10,728	55,80,589 11,81,877
Sutlej Bridge (Ferozepore).	Sutlej Bridge (Ferozepore).	40,00,000	\$57,56,333	17,50,985
Bolan Temporary line .	Bolan Temporary line . .	20,00,000	20,98,618	24,57,140
	,, New Works† . . .	...	2,00,000	...
Rukh-Rindi Improvements.	Rukh-Rindi Improvements.	2,00,000	2,00,000	2,00,000
	TOTAL .	6,75,50,000	8,32,05,588	3,66,92,740
<b>FRONTIER RAILWAYS—PROPOSED.</b>				
Punjab Northern Gradient Improvements.	Punjab Northern Gradient Improvements.	10,00,000	10,00,000	...
Crossing Amran to Frontier.	Crossing Amran to Frontier	50,00,000	50,00,000	...
Bolan Permanent line .	Bolan Permanent line . .	80,00,000	1,63,67,291	...
Peshawar to mouth of Khyber.	Peshawar to mouth of Khyber.	12,00,000	12,00,000	...
Patiala-Bahawalpur .	Patiala-Bahawalpur . . .	50,00,000	50,00,000	...
	TOTAL .	2,02,00,000	2,85,67,291	...

§ Includes "Loss by Exchange." Other estimates

with Forecast of 1885.

DITTEE.		Balance remaining to be spent.	PROPOSED GRANTS, 1887-88.		REMARKS.
Estimated, 1886-87.	Total.		Provision in Forecast.	Grant provisionally sanctioned.	
R	R	R	R	R	
1,28,21,370	3,58,96,312	1,37,251	...	20,00,000	A considerable excess probable.
29,80,600	31,08,645	—961	...	5,75,000	A.—The estimate of Rs2,65,00,000 in the Forecast under Sind-Pishin comprises :—
4,09,000	4,09,000	74,516	...	75,000	<div style="text-align: right;">Rs</div> Nari-Quetta . 2,50,00,000
22,07,000	26,72,412	50,528	...	...	Bostan-Shebo . 15,00,000
9,33,462	28,25,000	...	...	...	The present estimates are :—
36,47,000	36,59,218	3,67,782	...	3,50,000	Nari Quetta . 3,60,33,563
...	...	21,10,000	...	10,00,000	The Bostan-Shebo Section being included in the estimate for the Gulistan Extension.
1,02,19,000	1,57,49,589	55,80,617	} 41,25,000	{ 53,00,000	B.—The Balance of the 61½ lakhs, viz., Rs3½ lakhs, was originally intended to supply permanent-way of the Amram Extension and a reserve of Rolling-stock for the whole of the North-Western system, but the rough mileage rate entered for the extensions in the Forecast has been found at present almost sufficient to cover the permanent-way for these extensions, and the saving added to the 14 lakhs Reserve Locomotives may therefore be taken as representing a Forecast for the whole reserve stock of the system (including the Sind-Sagar), against which forecast Rolling-stock to the extent of Rs40,27,000 has been provided, and a further indent of Rs21,10,000 is under consideration.
7,57,663	19,39,540	3,71,186			2,00,000
27,31,480	44,82,465	12,73,868	7,00,000	10,00,000	
80,000	25,37,140a	—4,38,522	...	...	
2,00,000	2,00,000	...	...	...	
...	2,00,000	...	...	...	
3,69,86,575	7,36,79,321	+99,65,748 —4,39,483	48,25,000	1,05,00,000	* Estimate under consideration in connection with types of vehicles.
4,00,000	4,00,000	6,00,000	...	6,00,000	† Since found necessary.
...	...	50,00,000	35,00,000	...	‡ Exclusive of Rolling-stock.
...	...	1,63,67,291	...	...	(a) Accounts not yet finally sifted and adjusted.
...	...	12,00,000	...	...	} Estimates under consideration of Committees.
...	...	50,00,000	...	...	
4,00,000	4,00,000	2,81,67,291	35,00,000	6,00,000	

under this class exclude "Loss by Exchange."

PROJECTS.		As in Fore- cast.	Present Estimate.	EXPEN	
				To end of 1885-86.	
PROTECTIVE LINES—IN PROGRESS.		R	R	R	
Kanti-Umeria		37,57,000	45,45,622	37,72,480	
Umeria Colliery		6,00,000	6,00,000	2,55,926	
Bellary-Kistna		1,91,50,000	1,88,00,000*	87,75,779	
Cuddapah-Nellore		56,50,000	60,87,823*	33,64,429	
ASSAM-BEHAR	Tirhoot Section	Muzafferpur-Hajipur	22,00,000	...	...
		Sonepur-Hajipur (Gunduck Bridge)	14,20,000	20,24,250	9,73,134
	Assam-Bihar Section.	Jhingarpur to the Kosi	1,46,50,000	31,56,800	19,40,686
		Kosi to Dinagepur, including Muni- hari Branch			
		Kaunia to Dhubri	64,00,000	64,00,000	...
	TOTAL		5,38,27,000	5,16,45,558	2,34,86,479
PROTECTIVE LINES—NOT COMMENCED.					
Hindupur Extension (Bellary-Kistna Railway)		70,00,000	65,49,000	34,523	
Kadiri Extension (Cuddapah-Nellore Railway)		85,00,000	1,07,89,746	1,36,964	
Damalechurla-Villapuram		84,00,000	85,77,250	90,198	
Minor Famine Lines		90,00,000	90,00,000	...	
Kontera-Pooree		2,52,34,000	2,52,31,000	...	
TOTAL		5,81,34,000	6,01,50,005	2,61,680	
LINES UNDER AGREEMENT.					
Bezwarra to Hyderabad Frontier		25,60,000	19,66,754	...	
Warora-Chanda		35,00,000	35,00,000	...	
TOTAL		60,00,000	54,66,754	...	

\* Includes "Loss by Exchange." Other estimates

DITURE.		Balance remaining to be spent.	PROPOSED GRANTS, 1887-83.		REMARKS.
Estimated during 1886-87.	Total.		Provision in Forecast.	Grant provisionally sanctioned.	
R	R	R	R	R	
8,37,000	46,09,480	—63,858	...	...	
3,10,000	5,65,926	34,074	...	2,00,000	
50,65,180	1,38,40,939	49,59,061	41,75,000	40,00,000	As the balances include exchange the grants will nearly complete the line.
21,09,000	54,73,429	6,14,394	...	5,50,000	
...	...	...	...	...	Transferred to open line.
9,06,570	18,79,704	1,44,555	18,50,000		
—1,86,220	17,54,486	14,02,334		18,50,000	
18,42,000	62,46,045	37,85,009			
...	...	64,00,000	...	...	
1,08,83,510	3,43,69,989	+1,73,39,427 —63,858	60,25,000	66,00,000	
...	34,523	65,14,477	...	...	Survey outlay only.
29,500	1,66,464	1,06,23,232	...	...	
54,000	1,44,193	84,33,066	...	...	
...	...	90,00,000	...	...	
...	...	2,52,34,000	...	...	
83,500	3,45,180	5,98,04,825	...	...	
10,00,000	10,00,000	9,66,754	16,00,000	10,00,000	
...	...	35,00,000	...	...	
10,00,000	10,00,000	44,66,754	16,00,000	10,00,000	

under this class exclude "Loss by Exchange."

PROJECTS.	As in Fore-cast.	Present Esti-mate.	EXPENDITURE.			Balance remain-ing to be spent.	PROPOSED GRANTS, 1897-99.		REMARKS.
			To end of 1896-98.	Esti-mated during 1896-97.	Total.		Provision in Forecast.	Grant provisionally sanctioned.	
OPEN LINES.	East Indian	•	Rs	Rs	Rs	Rs	Rs	Rs	* The increase is provided in order to meet probable lapses of the Secretary of State and other contingencies.
	Eastern Bengal	•	•	•	•	•	25,00,000	20,00,000	
	North-Western	•	•	•	•	•	10,00,000	10,00,000	
	Rajputana-Malwa	•	•	•	•	•	20,00,000	10,00,000	
	Wardha Coel	•	•	•	•	•	•	7,00,000	
	Nagpure-Chhattisgarh	•	•	•	•	•	•	50,000	
	Dhond-Manmad	•	•	•	•	•	•	1,50,000	
	Burma	•	•	•	•	•	•	40,000	
	Northern Bengal	•	•	•	•	•	45,00,000	1,00,000	
	Tirhoot	•	•	•	•	•	•	2,50,000	
	Patna-Gya	•	•	•	•	•	•	2,00,000	
	Dacca	•	•	•	•	•	•	1,00,000	
	Cawnpore-Aolnara	•	•	•	•	•	•	25,000	
			•	•	•	•	•	50,000	
TOTAL			•	•	•	•	1,00,00,000	50,05,000	
Stores and Working Capital			•	•	•	•	10,00,000	26,85,000*	
GRAND TOTAL			•	•	•	•	2,60,50,000	2,99,50,000	
Frontier and Coast Defences			•	•	•	•	60,50,000	60,50,000	
Grant Total = normal 280 + 50 lakhs			•	•	•	•	3,30,00,000	3,30,00,000	

*Minute by the HON. SIR THEODORE HOPE, K.C.S.I., C.I.E., dated the 18th February 1887.*

According to the sketch of our present financial prospects for 1887-88, put forward in paragraph 4 of the despatch, a deficit not exceeding £260,000 may be expected; but this forecast is based on the assumption of the suspension of the Famine Insurance grant, and that measure is described as having been sanctioned by the Secretary of State. I presume that the sanction referred to is that contained in His Lordship's telegram dated 26th August 1886.

2. It appears to me that the altered position of affairs since August last fully

*From Viceroy, 13th August 1886.*

Your Lordship's telegram of 10th instant. We concur with Your Lordship that the financial position is very serious. As long as silver remains in its present unstable position, the financial condition of India must continue most critical. For a remedy which shall be permanent and effective, we can only again recommend to Your Lordship the proposals contained in our despatch of 2nd February 1886. With regard to Your Lordship's question as to what steps we can take to meet deficit and strengthen balances, we reply as follows:—Your Lordship is aware that the economies now under the consideration of the Finance Committee cannot have any appreciable effect until next year. We might draw a further sum of 20 lakhs from Provincial balances, but in view of the 40 lakhs already taken, we are unwilling to do this. It is always difficult at this season to forecast the prospects of the year, and the uncertainty regarding exchange makes any accurate estimate at present impossible. There will be loss of revenue and additional military expenditure in Upper Burma; opium revenue about equals estimate to date, but the price of Bengal opium is low, and expenditure exceeds estimate by 9 lakhs. We are disposed to place the falling off on account of Burma and opium at 100 lakhs. Under exchange the loss may be taken at 175 lakhs. We expect a considerable improvement in Railways and some improvement under other heads, the total amounting to 50 lakhs. The net deterioration is, therefore, 225 lakhs, and, allowing for the surplus in the estimate of 18 lakhs, the deficit promises to be 207 lakhs.

On the supposition that nothing can be done in the direction indicated in our despatch of 2nd February last to modify these anticipations, we propose, in order to meet the deficit, to reduce the Famine grant this year by 125 lakhs, being 75 lakhs on account reduction of debts and 50 lakhs devoted to Protective Railways, the expenditure on these Railways in the present year being added to capital expenditure on Public Works not charged against revenue. We also propose to raise salt duty from six annas to eight, which, if done with effect from 1st September, should give 65 to 85 lakhs. Closing balance at end of July 14 crores 37 lakhs, being 2 crores 78 lakhs over estimate, of which 2 crores 8 lakhs are due to short drawings. No necessity apparent at present for further strengthening balances. We cannot, however, conclude this communication without impressing on Your Lordship our conviction of the absolute necessity of measures calculated to restore stability to our standard. For instance, were the suggested Royal Commission to be at once appointed, it is possible that immediate improvement in exchange and considerable reduction of our anticipated deficit might result. It must be understood that it is only on the absence or on the failure of efforts in this direction that we have made the previous proposals for strengthening revenue which involve partial utilisation of reserve resources and increase of taxation and threaten ultimate absorption of Famine grant—measures which we cannot conceal from ourselves are open to the gravest objections. Opinion in favour of re-imposition of import duties, we may add, is rapidly gaining ground throughout India.

*To Viceroy, 26th August 1886.*

My telegram of 17th. Financial position. Her Majesty's Government decided it is undesirable now to increase Salt tax; suspension famine fund approved. Method of meeting remaining deficit may stand for consideration in November. Suggested Royal Commission under consideration of Her Majesty's Government.

or eight annas per maund to the salt duty from 1st September last. But we added that both measures were "open to the gravest objections," and that the former would "threaten ultimate absorption of [the] Famine grant."

The Secretary of State replied, under a special decision of the Cabinet, that the suspension of the Famine grant was "approved," but that an increase of the Salt tax was undesirable, and further consideration of how to meet the deficit should stand over till November. The Royal Commission for which we had pressed was promptly appointed.

justifies, and indeed demands, a reconsideration of the question of suspension of the grant. In the first place, as to sanction, the telegram must be read in connection with ours of the 13th idem. In the latter we stated that "on the supposition that nothing can be done in the direction" of "measures calculated to restore the stability of our standard," especially the appointment of a Royal Commission on silver, we proposed to meet the then anticipated deficit of 207 lakhs by suspending 125 lakhs of the Famine grant, and adding six

I do not think that this sanction, granted when the rupee was low and falling, and we deemed new taxation also indispensable, is applicable now, when exchange has improved, when we have obtained £500,000 by reductions in expenditure, and a large improvement in railway revenue, when our anticipated deficit chiefly proceeds from what we agree in describing (paragraph 4) as "temporary embarrassment" and "exceptional expenditure," and when we have unanimously concluded that new taxation is unnecessary. A reconsideration of the suspension of the grant is open to us, and also desirable.

3. It seems superfluous to reiterate the history of the Famine grant, its importance, uses, and legitimate application. Their most recent exposition will be found in our Despatch No. 275 (Finance and Commerce), dated 6th October 1885. We there urged, subject to the reserve of "extreme calamity," the "necessity for the continued application of so much of the Famine Insurance grant as remains to us after devotion of £750,000 to diminish borrowing." The administrative aspect of the uncommenced Protective Railways is further dwelt upon in paragraphs 19 and 20 of the present despatch. But the political aspect must also be considered. Upon that point we then remarked (paragraph 19) that the subject of the Famine Insurance scheme

"is one on which, in former times, there have been much misapprehension and considerable expression of public dissatisfaction, which have recently reappeared, and have been strenuously renewed on the occasion of the recent retrenchments. If our circumstances were such as to enable us to plead the justification of necessity, we should have no hesitation in adopting the policy suggested by Your Lordship, but it is impossible not to apprehend that the plea of necessity would prove of questionable validity."

We elsewhere, in the same despatch (paragraph 12), stated as follows:—

"Until, therefore, we have completed the works indispensable to the protection of the country from the effects of famine, we are unable, except under pressure of absolute necessity, to assent to the diversion of the revenues raised under the scheme from the objects with which the scheme was started. Although this may expose us to the criticism that by this use of the Famine Insurance grant we run the risk of incurring a deficit, and thereby adding to, in lieu of reducing, our debt, we believe that our justification will be found in the reply that the abandonment of the protective scheme now before Your Lordship will expose us eventually to greater financial loss than any deficit likely to be incurred (abnormal disaster apart) during the period of construction."

And again (paragraph 18)—

"We believe that during the comparatively short term required to carry out the great projects on which we are engaged, we should be prepared to accept a risk of temporary difficulties in respect of the absolute equilibrium of our finances greater than any that we can at present foresee, in the assurance that when the projects now in hand are completed, a stability will have been given to our finances which they could not otherwise have attained."

There can be no doubt, I presume, that a suspension of the Famine grant would now be open to the political objection above referred to, and that the measure would expose us to very severe and hostile criticism in both India and the House of Commons. Of that to be anticipated in India we had a foreshadowing in the autumn and winter of 1885-86. Such criticism it would be impossible effectively to meet in the face of our simultaneous recognition of the present difficulties as "exceptional," "abnormal," "temporary," and not calling for extra taxation.

But suspension would involve a further danger, indicated in our above-quoted telegram of 13th August 1886,—namely, that it would "threaten an ultimate

absorption of (the) Famine grant." The proposal now is, that the suspension should be for both the current and coming years. Such a suspension appears open to grave risks of abuse. Once established, and for so long a period, the temptation to prolong it, in order to present a more favourable Budget, and to minimise or ignore the value of the grant, will be extreme.

5. To sum up, circumstances have totally changed since August last, when we supposed heavy new taxation, in addition to the suspension of the grant, to be unavoidable. Exchange has improved, but large abnormal and temporary expenditure in Burma has supervened. Whatever deficiency there may be on our whole account, whether for this year or next, will be mainly due to Burma. For all the reasons given above, it seems to me more politic, as well as more financially and executively prudent, to admit the situation frankly, boldly, and even to show a deficit in our accounts in the ordinary manner, as we were prepared to do in September 1885, than to endeavour to cover the real state of affairs by the (in one sense) mere paper transaction of suspending the famine grant—an endeavour destined to be futile and to recoil with discredit upon ourselves.

6. It may here be convenient to offer in a concise form, exhibiting no details except such as are involved in the present discussion, the financial position for 1886-87 and 1887-88, as far as it is at present possible to foresee it. I am indebted for the figures to the courtesy of my honourable colleagues in the Financial and Military Departments, but it will be understood that they are provisional only, especially in the case of 1887-88. This uncertainty, however, in no way affects their use for the purposes of the present discussion on the policy of certain methods of treating the general financial situation—

## ESTIMATE, 1886-87.

Exchange taken at 1s. 5½d.

	£		£	£
Total Revenue	76,052,100	<i>Famine Relief and Insurance—</i>		
		Relief	1,000	
Deficit	1,562,900	Protective Railways	500,000	
		„ Irrigation Works	111,300	
		Reduction of Debt	749,000	
				1,361,300
		<i>Buildings and Roads—</i>		
		Military Works—		
		Upper Burma Buildings	92,000	
		Civil Works—		
		Frontier Roads	200,000	
		Upper Burma Roads	54,500	
		Ditto Buildings	45,000	
				392,000
		<i>Telegraph.—Construction only</i>		216,000
		<i>Army Services—</i>		
		Military Operations, Burma	1,070,000	
		Marine Services, Burma	155,000	
				1,225,000
		Other Charges—TOTAL		74,420,700
	77,615,000	GRAND TOTAL		77,615,000

N.B.—Total of Burma items 92,000 + 54,500 + 45,500 + 1,225,000 = £1,417,000.



## ESTIMATE, 1887-88.

Exchange taken at 1s. 5½d.

	£		£	£
Total Revenues	76,252,000	<i>Famine Relief and Insurance—</i>		
		Relief	1,000	
Deficit	1,448,000	Protective Railways	500,000	
		„ Irrigation Works	111,000	
		Reduction of Debt	749,000	
				1,361,000
		<i>Buildings and Roads—</i>		
		Military Works—		
		Upper Burma Buildings	250,000	
		Civil Works—		
		Frontier Roads	210,000	
		Upper Burma Roads	154,000	
		„ Buildings	34,000	
				648,000
		<i>Telegraph.—Construction only</i>	...	220,000
		<i>Army Services—</i>		
		Military Operations, Burma	650,000	
		Marine Services, Burma	50,000	
				700,000
		Other Charges—TOTAL	...	74,770,000
	<u>77,700,000</u>	GRAND TOTAL	...	<u>77,700,000</u>

N.B.—Total of Burma items 250,000+154,000+34,000+700,000=£1,138,000.

7. From the foregoing it will be seen that, if the Famine Insurance grant be left intact, the deficits in the present and coming years may, as far as it is now possible to form an opinion, amount to £1,562,900 and £1,448,000. If the Famine Insurance grant be suspended, these deficits become £312,900 and £198,000 respectively. The public mind is already pretty well prepared for a deficit on account of Burma, and would, I think, look with less disfavour on it than on the presentation of a nearer approach to equilibrium created by suspending the Famine grant. It will, of course, be understood that, as regards ways and means, the result is precisely the same whichever course is adopted. In the one case, the inevitable loan will be raised in the name of Burma; in the other case, in that of our indispensable railways and defences in actual progress.

8. The objection that the Famine Insurance scheme assumes the existence of a surplus, and cannot be maintained concurrently with a condition of deficit, is met by the reply that we cannot be said to be in deficit, properly so called, when the charges alleged to create it are needed for purposes which are legitimately capital outlay, and when we even have some £530,000 of such capital charges inside our revenue account, as shown in paragraph 16 of the despatch, which might be removed to produce equilibrium. But for this distinction as to capital outlay, we might be said to have been for years in deficit, through our outlay already "below the line." If capital charges ought to be inside the revenue account, then our present system of charging the loan funds used for Railways, Irrigation, and Defences outside it is wrong, and we are annually concealing by its means a large deficit. If they ought not to be inside, then the £530,000 may be taken out, and the Burma capital charges too.

## II.

9. I now desire, however, to advocate an alternative to the declaration of a

deficit in our Revenue Account on account of Burma, as contemplated in the preceding paragraphs—

- (a) On the annexation of a new country, its immediate special wants, such as barracks for police and troops, road clearances, and a minimum of indispensable civil buildings, may fairly be provided for out of loan funds, if revenue cannot meet them, either at all or with the promptness necessary.
- (b) A heavy military charge on first pacification of a newly-conquered country, and extra garrison for the first two or three years, may legitimately be so provided for in similar circumstances.
- (c) Revenue is in the Burma case now unable so to meet them, even after affecting all retrenchment which is prudently possible.
- (d) The amount to be so provided for out of loan funds should be ascertained by maturing a moderate scheme of really indispensable barracks, roads, &c., to be carried out as rapidly as possible, and either by fixing a normal garrison for Upper Burma, excess on which should be “special,” or, which perhaps would be equivalent and practically simpler, by taking as “special” the whole *special* Military charges incurred, but not the pay of any troops.
- (e) The amount to be provided from loan funds should be shown outside the annual Revenue Account, or “below the line.”
- (f) If the revenue, thus relieved of the special military charge, and by the substitution of interest charge for capital outlay, should be insufficient to secure approximate equilibrium after providing for all necessary normal expenditure, a further relief should be afforded by transferring from it to loan funds the cost of the frontier roads now in progress, or other suitable items of capital outlay debited to revenue on the ground that it can bear the charge.

The effect of this procedure would be to place outside the account about £1,417,000 in the current year, as shown in the first account in paragraph 6. For the coming Budget estimate, the amount would be £1,138,000 according to the second account in that paragraph, but this would be subject to modification by better information up to the date of the Budget. The total for Burma under the head of *Buildings and Roads* would, moreover, become a part of the general scheme for meeting wants under those heads which is already in hand, I believe, and should be carefully matured in the course of the next few months.

It is evident that this proposal for placing the charges “below the line” stands distinct from that of the mere provision from loan funds of the charges named, and might be waived without affecting the latter, if the provision to the full extent proposed were still recognised and the probable necessity of deficit for two or three years were definitely accepted. But there would be obvious risks in this, from a tendency to cut down essential expenditure in other directions throughout India in order to minimise the deficit.

10. An objection which may perhaps be preferred against the proposals is, that it is impossible to discriminate between charges to be provided under it from loan funds, and those which may be deemed normal and of a current administrative nature. This difficulty I am unable to perceive. The military charges can be readily identified, and must rapidly diminish with the settlement of the country. The *Buildings and Roads* outlay would be confined to that deliberately included in the scheme to be drawn up. This scheme should comprise nothing beyond the elementary essential to Civil Government—a bare

outfit, on receiving which the new province would start in its course of ordinary administration. A bare minimum of cutcherries and court-houses, jails, and similar civil buildings, and of barracks for the police and troops, all on the most economical style of structure, would be given. Similarly, mere good roads for locomotion, however convenient and useful to trade, would be scarcely thought of, but large tracts of country must be cut up into blocks by broad clearances, hundreds of miles in length, to make them accessible to all with comparative ease, to give us proper fiscal and police grip over them. For more than this, the province must be content with such funds as its normal growth and improvement in the general position may hereafter supply.

11. It may also be objected that the proposal involves a departure from our present system of accounts; that the existing rule is that unproductive outlay should be charged to revenue, only productive outlay being provided from loan; and that this rule is alone compatible with sound principles of finance, as recognised in India and in England.

12. I have, however, failed to discover any such general system or recognised rule. In England we have the precedents of the fortifications in 1860 and the barracks and other expenditure for army localisation in 1872. Lord Palmerston defends the fortification loans in 1860 on the ground that more money was required in a short time than could be spared out of revenue year by year, and by the analogy of the Parliamentary encouragement of loans for improvements of private property. Both these arguments apply to Burma. Mr. Mill, again, distinctly says that extraordinary expenses which cannot, without extreme inconvenience, be imposed on the country at once may be raised by mortgaging future income. (*Political Economy*, Book V, Chapter VII, Section I.) In India we have the precedent of the great army barracks, which were debited to capital till, in 1869-70, it was decided to bring them into revenue, then more able to bear it. We have also that of the Military or Frontier Railways, which, though admittedly unremunerative, or nearly so, are now being annually charged "below the line" to loan funds, to the extent of several millions. Again, we have the instance of the Frontier and Marine Defences, now in hand, which the Secretary of State, in December 1885, directed to be similarly charged. Finally, we devote the Famine Insurance grant, which is "inside" the revenue amount, to Railway and Canal construction at the same time that we similarly devoted the large sum "outside" it to which reference has just been made. Although loan funds were thus resorted to in all the instances of unremunerative outlay mentioned above, there is no general condition for discharging the obligation within a limited time. The English fortification loan of 1860, indeed, was raised by terminable annuities, but a similar proposal in respect of our frontier communications was negatived by the Secretary of State in 1884.

13. Looking on this question as a whole, it seems to me to have been treated upon the same fundamental principles wherever it has arisen, in both India and England—principles based on common sense and general policy, rather than on financial rules. Unavoidable extraordinary or special expenditure, whether of the nature of capital, such as for railways, roads, buildings, fortifications, and analogous works, or of current outlay, such as for the conquest of a foreign country, or the defence of one's own, should be met, as far as may be possible, out of the revenues of the year—augmented by taxation if it can be suitably imposed. When the limit of revenue has been reached, the resource of borrowing must be resorted to. The "limit of revenue" may be reached by the urgency of the outlay precluding its being spread over a series

of years. What expenditure is "unavoidable" is a question of fact for determination in each case.

The treatment in the accounts of unavoidable expenditure in excess of revenue depends on its nature and probable duration. An excess which is purely administrative, or which is obviously ephemeral, is treated as deficit, but a charge which is of the nature of capital outlay is put outside the account, especially if it is so heavy that it would occasion deficit for two or three years, or more.

14. Applying the above principles to this case, it seems to me clear (1) that the capital outlay in Upper Burma for the next two, or possibly three years, on barracks, civil buildings, road clearances, and the extra cost of military defence, is not "administrative" in the ordinary sense; and that these terms are not dissimilar but *ejusdem generis*, considering the recent conquest; (2) that the amount will be altogether more than the resources of the year can bear, having due regard to other urgent and indispensable calls upon them; (3) that it is not expedient to have recourse to further taxation; (4) that this outlay must be fully and promptly incurred, and, therefore, cannot be spread over a sufficiently long series of years to allow of revenue bearing it without deficit; (5) that consequently it ought to be provided by loan.

15. It may also be apprehended by some that the exclusion of this outlay from our ordinary revenue account may raise doubts as to the accuracy and reliability of our estimates. I should not propose such an exclusion if I thought that, by placing the outlay below the line, the Government or the public would be misled as to the true position or the necessity of economy in the administration. We are just now effecting all the administrative savings which are practicable, and are known to have this constantly in view. On the other hand, the presentment of a great deficit in the current account may produce on the public mind the impression that deficit has become the permanent condition of Indian Finance, whereas it is admitted that the war charges are extraordinary and abnormal, while the large outlay on roads and buildings is due to the necessity of doing in one year what in different circumstances might be spread over many. We have to meet the cost of an accumulation or arrear, so to speak, of charges connected with administration in our new acquisition, and the cost must be met at once. This seems to give the expenditure the character of capital rather than ordinary expenditure, and to justify the necessary loan being placed below the line, and not treated as part of the ways and means to meet expenditure in excess of revenue. The nature of the transaction would, of course, be fully explained in the Financial Statement.

The Chairman of the Bombay Chamber of Commerce, addressing the Chamber on 31st January, takes this view of the Upper Burma expenditure: "The charge ought to be made a capital one; an investment the cost of which should be treated as the cost of other ordinary investments. It is unfair to debit the outlay to the revenue of only one or two years."

It is, indeed, far more likely that the public will receive favourably a declaration that they will recognisedly be charged with only the interest on this Burma outlay, than one to the effect that it is to be charged to current revenue and met by existing tax-payers to the utmost extent that retrenchment will secure.

In short, having regard, on the one hand, to the fact that we possess in India a well-recognised system of raising annual loans and exhibiting them in our accounts outside the revenue account of the year, and that we now apply part of those loans to unproductive military railways and defensive works, as

also, on the other hand, to the public outcry which Indian deficits, technically so called, quite unreasonably and undeservedly create, it seems desirable, as a matter of policy, to use the above system for the exhibition of loans which may be raised for the Burma special outlay.

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*Minute by the HON. J. B. PEILE, dated the 18th February 1887.*

I agree with Sir Theodore Hope. This is not a question of sound or prodigal finance, but of the best way to state an account. Our present calculations are based on the assumption that the difficulties caused by exchange will not necessarily become greater. This being assumed, the difficulty in maintaining Budget equilibrium is entirely due to special Upper Burma charges. The treatment of these special charges in the Budget presents itself to me thus: They are recognised as temporary, and not such as to cause a normal excess of expenditure over revenue. They are not *current*, but *accumulated*, administrative charges, forming a capital outlay necessary to enable us to commence the orderly administration of our new province, and a necessary condition of our beginning to obtain from it the revenues which will meet the current charges of administration in future. The cost of military operations and initial outlay on road clearances, barracks, and official buildings is similar to the capital outlay on exploiting or reclaiming a new estate. The special and localised character of the outlay also suggests that it may preferably be marked off and distinguished from Indian finance proper, by exclusion from the ordinary revenue account. This is not done if the Famine Insurance grant of India is merged in the revenue account, and goes to diminish the deficit caused by the inclusion therein of the Burma expenditure as a charge against revenue. Even when that is done, there will probably remain an excess of expenditure over revenue to be met by loan. But the absorption of the Famine grant in revenue is a departure from the purpose for which it was provided by special taxation. Is it a smaller evil than the transfer of the Burma special charges to capital? We all propose to do one or the other, but need not do both. There is no great difference in character between the two operations. The first transfers to the ordinary revenue account a certain part of the revenue properly appropriable to capital expenditure, and money has to be borrowed for that capital expenditure instead. The other transfers to capital account charges which we should defray from revenue if we were not compelled to meet an accumulation of them at once. If the latter course is adopted, the objection to maintaining the Famine grant, that there is no revenue to allot to it, falls to the ground. As choice has to be made between the two transactions, continuity of policy, as well as clearness of statement, appears to be in favour of the latter. I admit that on the approximate figures available, the latter course does not, any more than the former, quite obtain equilibrium, but the deficit can be met in this case either from the part of the Famine grant designed for the reduction of debt, or, if it is desired to maintain the integrity of the Famine grant, by the transfer from revenue to capital account of the items now entered in the revenue account for frontier roads and telegraphs.

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*Minute by his Excellency the Commander-in-Chief, dated 19th February 1887.*

I concur with Sir Theodore Hope and Mr. Peile.

## FINANCIAL POSITION OF RAILWAY CONSTRUCTION.

## STATEMENT A.

## STATE RAILWAYS.

## RESOURCES—

- 1.—*Nominal grant of 3½ millions*, the whole of which may be put on the market if balances, &c, are not available.

Railways are entitled to £2,800,000 of this, *minus*, for the present, such sum (£390,000 in the current and £450,000 in the ensuing year) as may be required for Frontier and Marine Defences.

- 2.—*Famine Insurance grant*.—This grant nominally stands at—

1. Relief	£	1,000
2. Protective Railways	500,000	
3. " Irrigation	111,300	
4. Reduction or avoidance of debt	749,000	
<b>TOTAL</b>	<b>1,361,300</b>	

But it is understood that at present the appropriation of 2 and 4 is suspended, the equivalent of 2 being borrowed in addition to the 3½ millions, and 4 not being forthcoming in reduction of the latter.

This grant is, under paragraph 16 of the Secretary of State's Despatch No. 367 (Financial), dated 10th December 1885, chargeable with the interest of the Indian Midland, Nagpur-Bengal, and Bilaspur-Etawah Companies' lines. Item 3 has already been reduced from £250,000 by the charge for the first named, and will now be absorbed by the recent sanction for the second.

## GRANTS—

*Current year—*

Normal	£	2,800,000 loan.
Deduct for Frontier Defences	390,000	
	<b>Net</b>	<b>2,410,000</b>
Add from revenue	500,000	
		<b>2,910,000—(i)</b>

*Additional.*

Mysore Railway Refund	£	686,825
Special for Mandalay Railway Extension	200,000	
Extra grants for Frontier Railways, including unexpended grants of former years	1,263,175	
	<b>2,150,000</b>	
Less expenditure on Bezwada Frontier line advanced by Company	27,500	

**Net additions** . . . . . **2,122,500—(ii)**

**GRAND TOTAL (i)+(ii)** . . . . . **50,32,500**

## GRANT—

*Coming year—*

Normal	£	2,800,000 loan.
Deduct for Frontier Defences	450,000	
	<b>2,350,000</b>	
Add from revenue	500,000	
	<b>2,850,000—(iii)</b>	

*Additional.*

From Surplus Provincial Balances	£	2,000
Special grant, Mandalay Railway Extension	1,000,000	
Bezwada Frontier line (adjustment of previous year)	27,500	
	<b>1,029,500—(iv)</b>	

**GRAND TOTAL (iii)+(iv)** . . . . . **3,879,500**

*N.B.*—The whole of the above amounts are exclusive of Exchange, which is recognised as borne from the general revenues, independently of them.

RAILWAYS.	Estimated cost by latest information (including charges for loss by exchange). (1)	Expenditure to 31st March 1887 (including exchange). (2)	BALANCE REQUIRED TO COMPLETE.		
			Direct outlay. (3)	Exchanges at 1s. 6d (4)	Total. (5)
<b>LINES IN PROGRESS.</b>					
<i>Protective.</i>					
Bellary-Kistna . . . . .	1,88,00,000	1,23,98,428	57,01,571	7,00,000	64,01,571
Cuddapah-Nellore . . . . .	60,87,823	54,25,219	6,12,804	50,000	6,62,604
Assam-Bihar . . . . .	1,62,12,113	1,00,32,265	56,44,048	5,35,800	61,79,848
Umeria Colliery . . . . .	10,00,000	5,94,786	3,60,000	45,214	4,05,214
TOTAL . . . . .	4,20,98,936	2,84,50,699	1,23,18,223	13,31,014	1,36,49,237
<i>Frontier.</i>					
Sind-Pishin—Nari-Quetta Section	4,60,67,097	3,92,29,672	67,32,425	1,05,000	68,37,425
„ Durwaza-Quetta Section	27,22,940	22,39,932	4,73,008	10,000	4,83,008
„ Bostan-Gulistan Section	45,85,445	37,31,509	8,53,936	...	8,53,936
Sind-Pishin—Bostan Gulistan Section, Killa Abdulla Branch	5,18,516	3,85,000	1,33,516	...	1,33,516
Bolan . . . . .	29,40,330	28,59,330	81,000	...	81,000
Sind-Sagar—Eastern Section	24,13,326	20,33,837	3,75,000	4,489	3,79,489
„ Western	2,50,98,671	1,71,78,750	71,88,921	7,30,000	79,18,921
Punjab Northern—Gradient Improvements	10,00,000	3,04,000	6,96,000	...	6,96,000
Sutlej Bridge (Ferozepur)	56,10,333	44,91,405	11,18,000	5,928	11,18,928
Kandahar Reserved Permanent-way	40,30,000	34,74,000	5,52,000	24,000	5,56,000
Frontier lines Rolling-Stock	21,10,000	...	16,80,000	4,50,000	21,10,000
Engines and 7 miles rack rails (Abt System) for Bolan Railway (recently sanctioned)	2,00,000	...	1,55,000	45,000	2,00,000
TOTAL . . . . .	9,73,96,659	7,59,27,435	1,99,94,806	13,74,417	2,13,69,223
Toungchoo-Mandalay Extension	2,50,00,000	22,90,000	2,70,000	2,70,000	2,70,000
<i>Lines under agreement.</i>					
Bezwada to Hyderabad Frontier .	16,80,859	...	15,50,000	1,30,859	16,80,859
TOTAL . . . . .	16,80,77,453	10,66,68,134	5,45,73,029	48,36,290	5,94,09,319
<b>LINES NOT COMMENCED.</b>					
<i>Frontier.</i>					
Grossing Amran to Frontier (b)	1,91,50,000	...	1,88,00,000	3,50,000	1,91,50,000
Bolan Permanent Line	1,50,00,000	...	1,45,50,000	4,50,000	1,50,00,000
Peshawar to mouth of Khyber	12,00,000	...	12,00,000	1,00,000	13,00,000
Patnala-Bhawalpore, British Section	150,00,000	...	50,00,000	5,00,000	55,00,000
TOTAL . . . . .	4,03,50,000	...	3,95,50,000	14,00,000	4,09,50,000
<i>Protective.</i>					
Assam-Bihar—Kaunia-Dhubri Section	164,00,000	...	64,00,000	6,00,000	70,00,000
Hindupur Extension (Bellary-Kistna Railway)	75,25,000	...	67,32,000	7,93,000	75,25,000
Dharmavaram Extension (Cuddapah-Nellore Railway)	1,07,90,000	...	1,00,08,000	7,82,000	1,07,90,000
Palal-Vilupram Extension (Cuddapah-Nellore Railway)	93,98,000	...	84,84,000	9,14,000	93,98,000
Minor Famine Lines	190,00,000	...	90,00,000	8,00,000	98,00,000
Panchpara-Pooree	2,30,20,000	...	2,10,20,000	20,00,000	2,30,20,000
TOTAL . . . . .	6,61,33,000	...	6,16,44,000	58,89,000	6,75,33,000
<i>Lines under agreement.</i>					
Warora-Chanda . . . . .	135,00,000	...	35,00,000	3,00,000	38,00,000
TOTAL . . . . .	10,99,53,000	...	10,46,94,000	75,89,000	11,22,83,000
<b>ABSTRACT.</b>					
Lines in progress . . . . .	16,80,77,453	10,66,68,134	5,45,73,029	48,36,290	5,94,09,319
Lines not commenced . . . . .	10,99,53,000	...	10,46,94,000	75,89,000	11,22,83,000
GRAND TOTAL . . . . .	27,80,30,453	10,66,68,134	15,92,67,029	1,24,25,290	17,16,92,319
			Open Line Capital . . . . .		
			Reserve . . . . .		
			GRAND TOTAL . . . . .		

NOTE.—The estimates of expenditure to close of 1886-87 as well as the proposed grants for 1887-88  
 § The figures in this column are the best approximations that can be made.

PROPOSED GRANT FOR 1887-88.			REMARKS.																												
Direct outlay. (6)	Exchange. (7)	Total. (8)																													
<i>R</i> 40,20,000 4,91,400 18,59,190 2,00,000 66,71,310	<i>R</i> 7,00,004 39,000 67,000 21,000 8,27,000	<i>R</i> 47,20,000 5,30,400 19,26,910 2,21,000 73,98,310	Excludes Kaunia-Dhubri Section not yet sanctioned, shown under lines not commenced.																												
43,76,000 3,91,000 8,55,000 1,34,000 81,000 3,07,500 36,84,800 6,98,000 10,00,000 5,32,000 10,00,000 1,55,000 1,32,11,300 1,00,00,000	1,05,000 12,000 ... ... ... 3,000 93,000 ... 5,000 24,000 2,82,000 45,000 5,69,000 8,80,000	44,81,000 4,03,000 8,54,000 1,34,000 81,000 3,10,500 37,77,800 6,98,000 10,05,000 5,56,000 12,82,000 2,00,000 1,37,80,300 1,08,80,000																													
12,73,141	1,30,159	14,04,000	* R2,75,000 will be spent by His Highness the Nizam's Guaranteed Railway Company, to be refunded to the Company by Government in 1887-88.																												
3,10,55,751	24,06,759	3,34,62,610	† Outlay now estimated by the Company—																												
			<table><tr><td>1886-87</td><td>.</td><td>.</td><td>.</td><td>.</td><td>.</td><td><i>R</i> 2,75,000</td></tr><tr><td>1887-88</td><td>.</td><td>.</td><td>.</td><td>.</td><td>.</td><td>11,29,000</td></tr><tr><td>1888-89.</td><td>.</td><td>.</td><td>.</td><td>.</td><td>.</td><td>2,76,859</td></tr><tr><td colspan="6">TOTAL</td><td>16,80,859</td></tr></table>	1886-87	.	.	.	.	.	<i>R</i> 2,75,000	1887-88	.	.	.	.	.	11,29,000	1888-89.	.	.	.	.	.	2,76,859	TOTAL						16,80,859
1886-87	.	.	.	.	.	<i>R</i> 2,75,000																									
1887-88	.	.	.	.	.	11,29,000																									
1888-89.	.	.	.	.	.	2,76,859																									
TOTAL						16,80,859																									
...	...	...	(b) The Amran estimates are at present R1,91,50,090 for the Gwaja and R1,69,00,000; for the Sanzal routes, but it is hoped that these amounts may be reduced fully one half by the adoption of Abt System, now under experiment.																												
...	...	...																													
...	...	...	The Bolan permanent line is estimated at R1,45,50,000, excluding exchange, but it is hoped that this may be reduced to about R80,00,000 by the adoption of the Abt System.																												
...	...	...	On the other hand, even if the Abt System is adopted, a bridge over the Chenab, near Share Shah, and an extension of the Sind-Sagar Railway to the Indus at Kalabagh, have been mooted, and these or other Frontier Railway projects, including improvement of gradients on the Jhelum-Peshawar portion of the North-Western Railway, may lead to the total outlay under this head of uncommenced Frontier lines not being less in the end than the sum of R4,09,50,000 shown in this statement.																												
...	...	...	‡ These estimates in the forecast excluded Exchange, but the probable addition for Exchange is given in column 4.																												
...	...	...																													
...	...	...																													
...	...	...																													
...	...	...																													
3,10,55,751	24,06,859	3,34,62,610																													
...	...	...																													
3,10,55,751	24,06,859	3,34,62,610	§ About 7½ crores of this amount was temporarily unremunerative on 31st March 1886, as the lines had not been completed for traffic and the greater portion still is so, but large sections will be opened very shortly.																												
77,39,240	8,30,141	85,69,390																													
3,87,96,000	32,37,000	4,20,33,000																													

are subject to modification, when the Estimates, now under consideration, are finally settled.



### STATEMENT B. COMPANIES' RAILWAYS.

*Resources.*—The Capital is in all cases raised by the companies themselves without State intervention.

The interest is guaranteed by the State: that for the Southern Mahratta, Railway is paid out of the general revenues; that for the Indian Midland Nagpore-Bengal, and Bilaspur-Saugor, is chargeable to the Famine Insurance Grant, as explained in Statement A.

	Estimated cost by the Government information	Expenditure to 31st March 1887.	Balance required to complete.	Grant, 1887-88.
<i>Lines in progress.</i>				
Indian Midland . . . . .	₹ 6,32,64,360	2,42,38,585	3,90,25,775	2,29,02,000
Southern Mahratta . . . . .	6,19,13,5.6	5,6-,99,033	50,14,483	57,55,000
Nagpur-Bengal—				
Nagpur-Nandgaon Section, including Conversion . . . .	1,85,00,000	21,21,09,169	63,80,831	1,70,000
Nandgaon-Sitarampur . . . .	4,40,00,000	17,06,523	2,22,93,477	18,000
<b>TOTAL</b> .	<b>18,76,77,876</b>	<b>9,40,53,310</b>	<b>9,27,24,566</b>	<b>2,88,45,000</b>
<i>Lines not commenced.</i>				
Bilaspur-Saugor—				
Bilaspur-Umeria Section . . .	1,61,00,000	...	1,61,00,000	...
Katni-Saugor . . . . .	98,98,000	...	98,98,000	...
<b>TOTAL</b> .	<b>2,59,98,000</b>	<b>...</b>	<b>2,59,98,000</b>	<b>...</b>

*N.B.*—The Umeria-Katni Section of the Bilaspur-Saugor Railway has been provisionally constructed as a State Railway and is now open. Any concession to a company would necessarily, for executive reasons, be for the whole line between Bilaspur and Katni, including this section, and a refund of its cost (*about 45 lakhs*) would accrue to the Government.

### STATEMENT C.

Refunds which may become successively available,—*vide* paragraph 17 of Government of India Despatch No. 47 (Finance and Commerce), dated 22nd February 1887:—

Nagpore-Bengal . . . . .	85
Bellary-Kistna . . . . .	142
Cuddapah-Nellore . . . . .	61
Katni-Umeria . . . . .	45
Assam-Bihar . . . . .	280
Sindia . . . . .	95
<b>TOTAL</b> .	<b>708</b>

No. 65 (Financial), dated 15th March 1887.

From—The Government of India,  
To—The Secretary of State for India.

We have the honour to acknowledge the receipt of Lord Kimberley's Financial Despatch No. 216, dated the 29th July 1886, reviewing the Revised Estimate for 1885-86 and the Budget Estimates for 1886-87.

2. In accordance with the instructions contained in paragraph 2 of the despatch, we have authorised the Comptroller and Auditor General to carry out the corrections in the figures adopted in the statement of past years appended to the Financial Statement for 1886-87.

3. We beg to point out that there is a misapprehension in paragraph 18.

£
512,700
126,207
<hr/>
638,907
<hr/>

The lapse of 1884-85 was not £126,207, but £638,907, as per margin. The first item of this was re-granted in the Budget, and could not afterwards be resumed as directed in Your Lordship's Despatch No. 66

(Railway), of 4th June 1885, because, as explained in our No. 113 (Railway), of 31st July 1885, the war reductions had taken place intermediately. The second item of lapse was not directly re-granted, but both lapses were virtually covered by the extra grant of £1,37,00,000 made for Frontier Railways in 1885.

4. With reference to the enquiry in the last sentence of paragraph 24, we have to state that the orders prohibiting the levy of income tax on any profits of the Guaranteed Railway Companies, except those which are in excess of the sum required to cover the guaranteed interest, involve a sacrifice of about £37,000, the gross income tax receipts being reduced by £169,000, the portion of the tax on Railways payable ultimately by Government disappearing from the income tax receipts, as well as from the working expenses, of Guaranteed Railways, and the portion of the receipts payable by the companies being reduced from £53,600 to £16,600.

5. In explanation of the variations under the head of Exchange between the Revised Estimates of 1885-86 and the Budget of 1886-87, referred to in paragraph 32, we desire to explain that in making up the estimates of 1886-87 it was considered best to take as a charge of the year the exchange upon the repayment of the Loan of 22nd April, 1854, which came to £376,200.

6. With regard to the increase in the Ordinary Public Works expenditure in the group of Buildings and Roads, referred to in paragraph 35, it will be observed that such expenditure occurs partly under Military and partly under Civil Works. The increase under Military Works in the present instance is due to special causes,—*viz.*, the occupation of Upper Burma, the rendition of Morar to Scindia, and the need for providing accommodation for the troops added to the strength of the Army in India. It is covered by the payment of £150,000 by Scindia on account of the Morar Cantonment, and this amount should be deducted in comparing the estimate of expenditure with the actual expenditure of previous years.

We would invite special attention, however, to Statement A, which is appended. From this it will appear that the item is lower than it was ten years ago, and shows no greater fluctuations from year to year than might reasonably be expected in the varying circumstances and emergencies which from time to time arise.

7. As regards the expenditure on Civil Works, we solicit a re-perusal of the

1. Despatch No. 223, Financial, dated 24th August 1883, paragraphs 26 to 29. Sir Evelyn Baring's Minute appended to above, paragraphs 58 to 92.
  2. Despatch No. 234, Financial, dated 24th August 1883, forwarding Sir Evelyn Baring's Minute—see paragraph 33.
- remarks in paragraph 21 of the Secretary of State's Despatch No. 183, Financial, of 28th June 1883, and of the reply made to them at the time by the Hon. Sir Evelyn Baring and Mr. Barbour, in the documents referred to marginally, which were concurred in by the Government of India. The misapprehensions likely to arise from arguments based wholly on increase of expenditure and on comparisons

Despatch No. 234, Financial, dated 24th August 1883, forwarding Sir Evelyn Baring's Minute—see Appendix II, paragraphs 314 to 323.

between groups of recent and anterior years were demonstrated in a special note by Mr. Barbour, which formed Appendix I to the Despatch No. 234.

8. Your Lordship will probably, however, desire from us a more specific explanation in reply to paragraph 35. The purport of this paragraph we understand to be that, after deducting £300,000 of special grants for Frontier roads and Upper Burma, the outlay on Ordinary Public Works is nearly £800,000 larger than the average of the five years ending in 1881-82; that this outlay is not swollen by exchange; that it is peculiarly under the control of the Local Administrations; that it has been reduced compared with three or four years ago; and that stringent orders should issue to carry the reduction further. We will examine these points in succession, with the aid of the analytical Statement A already referred to.

9. The first point we would explain is that the outlay is not, as it is supposed

	Total of 12 years.	Percentage.
	£	
Military Works. . . . .	12,976,508	22·60
Civil Works, Imperial. . . . .	5,309,218	9·24
" Provincial. . . . .	21,278,657	37·04
Local. . . . .	16,564,324	28·83
England and Exchange. . . . .	1,317,784	2·29
TOTAL. . . . .	57,446,446	100

to be, peculiarly under the control of the Local Administrations. They have no concern in about three fifths of it, which will be seen, from the marginal abstract of the aggregate figures given in the paragraph, to be partly under the Imperial Military and

Civil, and partly under the Local Boards' control. What the Provincial Governments do control is the sum allotted to them for expenditure under the terms of their contracts, which cannot be curtailed (except under abnormal exigency) without a breach of faith. The portion appertaining to Local Boards is mostly placed by law under the control of those bodies. No reduction in it would have any appreciable effect on our finances.

10. The next point to which attention may be called is that a comparison with the five years selected can give no useful result, since they were coincident with the Bombay-Madras famine and the Afghan war, during which outlay under this head was much reduced by both the accumulation of balances and the debit to "Famine Relief" of charges which would otherwise have appeared under it. The return to normal outlay and the expenditure of accumulations necessarily caused an increase which, from this cause, was apparent, and not real. The depletion of those accumulations again produced a reduction to the eye which was not really economy.

11. A further consideration which cannot be ignored is, that the India of to-day is not the *average* India of a period terminating five years ago. Not merely do our greater population, and increased commerce, means of locomotion, &c., require enlarged accommodation in the way of post offices, telegraphs, court-houses, jails, schools, dispensaries, feeder roads, &c., but every permanent addition to these facilities involves a new permanent current charge for its maintenance.

12. That the Budget of this year for Ordinary Public Works should show a

Heads and Subheads.	Average, 1875-76 and 1876-77.	Budget, 1886-87.	Budget, 1886-87, normal- ised.
Military Works . . .	1,270,030	1,255,367	1,005,367
Civil Works, Imperial . .	301,007	621,000	321,000
" Provincial . . .	1,611,332	1,952,800	1,770,000
Local . . .	1,434,535	1,617,100	1,617,100
England . . .	92,877	77,300	77,300
Exchange . . .	12,825	25,767	25,767
TOTAL CIVIL WORKS . .	3,352,527	4,293,967	3,811,167
GRAND TOTAL . . .	4,622,557	5,449,334	4,816,534

larger total than an average struck between five and ten years ago need not, therefore, cause surprise. Although much reliance should not, in our opinion, be placed on contrasts with periods differently circumstanced from our own, we may invite a study of the marginal table, deduced from Statement

A, in which the Budget figures of this year, normalised by the exclusion of the three special items named in paragraph 35,—*viz.*, barracks for extra European troops, frontier roads, and Upper Burma Civil Works, and also of estimated outlay from Provincial balances,—are contrasted with the average of 1875-76 and 1876-77. Although those two years are low, owing to the complicated effect of the famines in Bengal, Madras, and Bombay, the aggregate of 1886-87 touches them within £133,157; while the excesses of Provincial and Local outlay are only £197,918 and £182,565 respectively. Regarding these last, it is noticeable that the Provincial outlay, which is under our control, has increased in no greater ratio than the Local, which is not; and in so far as this test may be adopted, it would serve to show that the Provinces in devoting their available revenues to this amount of expenditure have not exceeded what the needs of the country justified, in view of the resources at their command.

Again, if the special grants of £200,000 for frontier roads and £100,000 for Upper Burma be deducted, the present expenditure on Imperial Civil Works in India is reduced to £321,000,—a figure which is almost the same as the average expenditure of the years 1877-78 to 1879-80, when this item of expenditure was kept as low as possible in view of the financial difficulties of that time.

13. Local expenditure being thus met from Local resources, there is in our opinion no special reason why we should attempt to impose restrictions on it so long as Local bodies have sufficient resources at their command to meet the expenditure which they propose to incur. Similar remarks, subject of course to the amount of revenue left at the disposition of Provincial Governments, apply to Provincial expenditure on Civil Works. One of the chief inducements that Provincial Governments have towards good administration of their finances is, that by this means they can obtain funds for useful expenditure on Public Works and otherwise. From Statement A it will be seen that since 1877-78 the increase of Provincial and Local expenditure accounts for £904,930 of the total increase. It cannot be expected, nor is it desirable, that there should be any large reduction in purely local expenditure, but the contribution of £400,000 obtained this year from Provincial Governments, and the probable reduction in their resources of about £500,000 yearly which will result from the investigations of the Finance Committee, will necessarily lead to a material reduction of Provincial Public Works expenditure in future years.

14. The inconclusive nature of comparisons between groups of recent and anterior years has been alluded to in paragraph 7 of this despatch. This is further illustrated by that of the two groups, 1877-78 to 1881-82 and 1882-83 to

1885-86, which are presented in paragraph 35,—one group being distinguished by famine, war, and accumulation of revenue deposits, and the other by the opposite characteristics. How very materially the Provincial and Local balances influence and vitiate such comparisons may be gathered from a study of State-

Heads and Sub-heads.	Average, 1875-76 to 1886-87.	Budget, 1886-87, normal- ised.
Military Works . . . . .	1,081,376	1,005,367
Civil Works, Imperial . . . . .	442,435	321,000
„ Provincial . . . . .	1,773,222	1,709,200
„ Local . . . . .	1,380,360	1,617,100
„ England . . . . .	90,608	77,300
„ Exchange . . . . .	19,203	25,767
TOTAL CIVIL WORKS . . . . .	3,705,829	3,750,367
GRAND TOTAL . . . . .	4,787,204	4,755,734

ment B appended. It will show, for instance, that the supposition already mentioned in paragraph 10, that there have been reductions compared with three or four years ago, is mistaken. Contrast, less open to objection though still unsatisfactory, may be obtained by taking (from Statement A), as in the margin, an average of the whole 12 years cited in paragraph 35, so that ephemeral peculiarities may neutralise each other as far as possible. This does not indicate, we venture to submit, any undue growth of controllable outlay or any extravagance at the present time. If, moreover, we were to consider, *per contra*, the revenue arising from some of the works undertaken, and of the Departments served, such as the Post Office and Telegraph, the percentage of outlay would be an annually diminishing one.

15. Passing from all such broad contrasts, we desire to remark that a careful scrutiny of the details of expenditure can alone convey a just appreciation of the course of administration in the matter of Ordinary Public Works. We may point out, as an illustration of the value of averages, that the Civil Imperial item for 1883-84 was more than doubled by the transfer to this head, from that of "Productive Public Works," of a book item of £533,070 capital outlay on the Madras Harbour. We believe that the result of such a scrutiny would be to justify the administration, during the period under review, and to show that it might be charged as much with undue parsimony, in the face of the growing material needs of the Empire, as with extravagance.

16. Referring to the discrepancy in the figures of the Military Estimates, pointed out in paragraph 37, we beg to explain that the figures in paragraph 473 of Part II of the Financial Statement are those finally adopted on receipt of the telegraphic corrections in the Home Treasury estimates, while those quoted in the despatch under reply are the figures of the *original* Home Treasury estimates.

17. Your Lordship's 39th and 40th paragraphs deal with the subject of contributions from the Provincial Governments in case of emergency. The withdrawal of £400,000 from Provincial balances last year is approved, and a hope is expressed that some means may be devised by which those Governments may be called upon, in such case, "to contribute a proportionate share towards meeting the necessities of the Empire according to some established principle." Remarks of somewhat similar tenor are to be found in Your Lordship's Despatch No. 367F., dated 10th December 1885.

With regard to this point we beg to refer to our Resolution No. 458 (Finance and Commerce), dated the 28th ultimo, which explains the principles on which we

have regulated the relations of the Imperial and Provincial Governments in respect of the Provincial contracts.

In revising the contracts we considered whether it would be possible to devise some such form of words as would not interfere with the satisfactory working of the Provincial arrangements. But the terms of the new contracts are such that in all probability a smaller margin than that accruing under previous arrangements will be left to the Local Governments. The matter referred to us by Your Lordship is not likely to lead to practical difficulties in the case of contracts based upon such detailed enquiries and estimates as have this year been made.

18 With reference to paragraph 41 of the despatch, we beg to state that we would have provided for a surplus of £500,000 if it had been possible to do so without imposing further taxation; but that it was considered inexpedient to have recourse to taxation for this purpose, and that in the uncertainty of our position caused by exchange (alluded to in paragraph 52 of the despatch), the provision of such a surplus in the Budget, however useful as a precautionary measure, presents no longer any guarantee as to securing a surplus on the year's accounts.

19. The 42nd paragraph of the despatch under reply contains a description of the capital outlay arrangements of the current year which would seem to indicate an impression that the Public Works Department has received more than has actually been the case. It may be mentioned that the remarks which we have to make in respect of capital outlay, referring as they do to 1886-87 and the immediate preceding years, are put forward with entire reserve as to the question submitted to Your Lordship in our Despatch No. 46, dated 22nd February 1887. It is necessary to point out that the loan limit of 350 lakhs fixed for "the construction of Public Works," was originally assigned with reference to the needs of railways and irrigation only. The amount by which this limit is said to have been exceeded is swelled by 39 lakhs for Frontier and Coast Defences—an item which has never been charged to it until the current year. We append an account (Statement C) from 1882-83 showing that on 31st March 1886 there was a balance of loan funds in favour of Railways and Irrigation amounting to Rs55,23,835, and that in the current year the extra grant (irrespective of the temporary special provision for the Mandalay Railway) is only 131 lakhs, of which Rs68,68,245 will be provided, without borrowing, by the Mysore refund, as contemplated in our Despatch No. 264F. of 22nd September 1885. If the unexpended balance of Rs40,23,835 be set off against this grant, as it reasonably may be, the net extra amount for the year is reduced to Rs90,76,165.

20 Taking the current year alone, it is possible that this outlay on Railways may appear to some to be excessive. It is therefore important to mark

	R
Extra grant . . . .	64,71,966
Ditto . . . . .	48,06,755
Mysore refund . . . .	68,68,245
Extra grant. . . . .	14,25,000
	<hr/> 1,95,71,966
<i>Deduct—</i>	
Balance on account . . . .	40,23,835
Net extra grant . . . . .	<hr/> 1,55,48,131

the fact that in the whole five years up to the end of the present year the excess of grant over the normal amount sanctioned by the Secretary of State after reference to two Parliamentary Committees has been only 155½ lakhs. The whole of this excess is due to increased activity in prosecuting the Frontier Railways, caused by the war antici-

pations of 1885, and nearly half of it has been provided by the Mysore Railway refund, which accrued without resort to the money market. This activity has

received the entire concurrence and active support of successive Secretaries of State, as the following instances will show:—

In Despatch No. 148R. of 27th November 1884 it is said—

"I desire to express not merely my general concurrence in its adoption, but my hope that it\* will be completed within the four years over which Your Excellency proposes to spread the expenditure."

And again in the same despatch—

"The course I am of opinion should be pursued is that the frontier communications should be completed with the utmost speed consistent with economy of construction."

In his Military Despatch of 15th October 1885, the Secretary of State says:—

"With respect to the roads, railways and bridges, &c., &c., &c., I have only to express my earnest desire that they may be pressed forward with such energy as to ensure their completion within the period estimated by your Government,—viz., the end of the year 1887-88."

And again, in Despatch No. 367 (Financial) of 10th December 1885, in which Lord Randolph Churchill reviews the programme of railway expenditure for 1886-87, His Lordship says:—

"Large as is the amount of expenditure thus contemplated in 1886-87, I will not withhold my sanction from Your Excellency's proposal to obtain the funds from borrowed money, such a course being in my opinion rendered necessary for the protection of the country against the risks of war and famine."

	Actuals, 1884-85.	Actuals, 1885-86.	Actuals, 1886-87.	Budget, 1886-87.	Grants it stands, January 1887.
	Lakhs.	Lakhs.	Lakhs.	Lakhs.	Lakhs.
Frontier Lines . . . . .	6.69	81.34	316.97	292.86	327.26
Mandalay Extension . . . . .	...	...	...	...	20.00
Other Lines in progress . . . . .	227.57	219.24	129.40*	95.34	101.44
Open Lines . . . . .	109.87	128.41	10,150	78.55	64.45
Stores and Working Capital . . . . .	3.94	8.32	1.00	-8.60	-8.33
Reserve . . . . .	...	...	...	4.76	1.84
<b>TOTAL . . . . .</b>	<b>348.07</b>	<b>437.31</b>	<b>548.87</b>	<b>463.41</b>	<b>506.66</b>

\* Against this expenditure there was a credit on account of the Indian Midland Refund of 46.75 lakhs.

	£	£	£
<i>Current year's outlay.</i>			
Railways, Irrigation, and Defences . . . . .	5,868,800	5,217,100	
Advances to Municipalities . . . . .	897,600	897,600	
Railways of Guaranteed Companies . . . . .	3,162,000	3,162,000	
<b>TOTAL . . . . .</b>	<b>9,928,400</b>	<b>9,276,700</b>	
<i>Deduct, paid from revenue—</i>			
Famine Insurance grant . . . . .	748,500	748,500	
Ordinary surplus . . . . .	182,200	469,500	
		<b>930,700</b>	<b>279,000</b>
<b>Balance to be raised . . . . .</b>		<b>8,997,700</b>	<b>8,997,700</b>

is remarked that £8,997,700 is "obtained by borrowing in some form or other," and in the next paragraph it is added that

"However important it is to develop the resources of the country, I cannot think it desirable, in present circumstances, that the credit of the State should be

The extreme extent to which expenditure on other railways has been reduced in order to meet these orders and the obvious necessities of the case, in respect of frontier lines, is shown by the marginal table, from which exchange is excluded.

21. The 49th paragraph of the Despatch is devoted to the analysis of the loan funds' outlay for the current year, which is extracted marginally, adding the figures exclusive of exchange, so as to obtain comparisons with past years. It

so largely used for promoting objects not of absolute or urgent necessity; and it is specially necessary to be cautious in increasing permanent liabilities, when borrowing in rupee securities is so difficult and the continued fall in exchange has so greatly enhanced the burden of sterling obligations."

22. Your Lordship's comments to which we have drawn attention might be held to point to the conclusion that the outlay to which they refer was abnormal in amount, and was devoted to objects which are not of urgent necessity; and that the Government of India was alone responsible for incurring the expenditure in question, which was largely unremunerative. It is desirable to make a few remarks on this aspect of the subject.

In the first place, it may be remarked that the figures quoted in the last paragraph are unsuitable for the purpose of comparison with former years in

	£	£
Subscribed capital received.	.	2,060,500
Net expenditure—		
Gross	.	5,449,000
Less refunds	.	1,684,700
		<u>3,764,300</u>
		1,708,800
Net withdrawals—		
Paid for discharge of debentures	.	1,458,200
Figure given in despatch	.	3,162,000

respect of the liabilities incurred during the year on account of Public Works. The entry for "Railways of Guaranteed Companies" is a net figure, arrived at as shown marginally. The subscribed capital may, indeed, be termed a "form of borrowing," but the discharge of debentures is a reduction of liability. These

Guaranteed Railway accounts are, in reality, mere drawing accounts, and a large withdrawal in one year is counterbalanced by the advantage of using surplus deposits in another; thus there was a surplus of £3,848,600 in 1885-86 against the debit of £3,162,000 in this year.

Again, in the calculations of paragraph 45 of the despatch under consideration, we observe that the reduction of £1,098,700 in the balances is regarded as a form of borrowing, although it is clear that the balances may have been strengthened by the excess deposits of Guaranteed Railways in former years.

We append a statement (D) which may perhaps show the whole position more clearly. The "balance to be raised for Public Works" and the actual borrowings are the items requiring chief attention.

It will be observed, in the first place, that when the effects of what we have termed the drawing accounts are practically eliminated, the amount to be raised for Public Works in 1886-87 is only £4,938,100, instead of £8,997,700, as might otherwise be inferred from the method of stating the account adopted in paragraph 49 of the despatch, coupled with the remarks next following.

Secondly, the amount actually borrowed in 1886-87 compares favourably, if due allowance be made for the exigencies of frontier defence, and the special grants on that account, with the average amounts borrowed annually in earlier years as far back as 1859-60.

23. As to the bulk of the outlay shown in the statement, which is for State Railways and Irrigation, we would invite perusal of paragraphs 7 to 11 of our Despatch No. 269 (Financial), dated 24th September 1883, in which it was shown that the outlay then advocated (which differed comparatively little from the present normal sanction) was "less in amount, and far less burdensome, than the outlay which was thought necessary 25 years ago, when the country and finances were in a far less advanced and flourishing state." Adopting and

1867-68 to 1883-84	.	.	3,477,800
1884-85 to 1886-87	.	.	4,273,651
1885-86 alone	.	.	6,190,800
1886-87 alone	.	.	4,899,000



supplementing the figures there given, we obtain the contrasts of annual figures given below, which necessarily exclude exchange:—

ANNUAL AVERAGES.						Revised Estimate, 1885-86.	Budget Estimate, 1886-87.
	1869-80 to 1863-64.	1864-65 to 1867-68.	1868-69 to 1873-74.	1874-75 to 1883-84.	1884-85 to 1886-87.	£	£
Railways, Guaranteed and subsidized .	6,394,277	6,044,225	2,675,679	1,011,901	8,042,983	3,168,003	3,764,300
State . . . . .	...	(a) 594	834,266	(b) 2,923,711	(b) 3,960,318	(c) 4,346,900	(b) 4,127,100
Irrigation and Navigation . . . . .	...	(a) 219,255	1,024,084	971,086	672,165	617,100	700,000
TOTAL STATE .	6,394,277	219,840	1,068,940	3,899,797	4,632,083	4,964,000	4,827,100
GRAND TOTAL .	6,394,277	6,264,074	4,634,619	4,941,698	7,668,066	8,130,000	8,501,400

(a) Outlay for 1867-68 only

(b) Excludes debt incurred in purchase of Guaranteed Railways.

24. Regarding the necessity for the above outlay, the passages to which we have referred, in the preceding paragraph 20, might be supplemented by others specifically recognising the importance and urgency of protective works, especially railways, which are admitted on all sides, and the execution of which on the lines from time to time advocated by us is delayed, not because they are not needed, but from pressure on our finances. That capital outlay on open lines is unavoidable, needs no demonstration. We need scarcely add that not one of the great works in hand has been undertaken without the Secretary of State's previous sanction.

25. The remaining point is that of dead-weight. It is shown in paragraph 8 of the Despatch No. 269 F. of 1883, already referred to, that at the time when the large loans, at a high rate of interest, were raised in past days, the railways

	£	were a heavy and progressive loss to the State. In 1863-64 this loss amounted to £1,634,634. Now the case is very different, as shown in the appended Statement E and summarised in the margin, where the figures given
1890-91 . . . . .	31,151	
1881-82 . . . . .	938,572	
1882-83 . . . . .	247,762	
1883-84 . . . . .	903,443	
1884-85 . . . . .	460,431	
1885-86 . . . . .	1,181,341	
1886-87 (Revised) . . . . .	476,900	

in enclosure No. 3 to the above despatch are revised and carried on down to the present time. The broad result is a gain of £4,239,600 in the seven years, which exchange converts into a loss of £5,066,424, as detailed in Statement F. Statement F, however, puts the case in the most unfavourable light, for it includes under the head of State Railways the interest on all the capital for the time locked up unproductively in unopened lines in progress. This interest is estimated in the Budget of the current year, for both State Railways proper and subsidised lines, such as the Southern Mahratta, the Indian Midland, and the Bengal Central, at £709,438, excluding exchange, or £821,538 including that item. It will be noticed in Statement F that it is the old guaranteed lines which drag down the amount. As their contracts fall in, and the lines in hand are opened, a far better result will be attained. In any case, the improvement on earlier years is of course unaffected, and the fact remains that the railways are bringing in a large and annually increasing return.

We also append a statement (G) for 1885-86, showing that the open State Railways, including exchange and indirect charges, earned 5·53 per cent., and that the temporarily unproductive capital outlay on State lines proper in progress amounted to about 7½ crores of rupees. Even when allowance is made for the cost of remitting to England such portion of the net earnings as is due for interest on capital raised in sterling, the return is 5·39 per cent.

In view of such results of our investments, coupled with the fact that our credit is so good that sterling loans can readily be obtained at about 3½ per cent., there would seem to be no impropriety in borrowing for really urgent needs, as we do, unless in accordance with the contention which we are well aware will not be endorsed by Your Lordship that loans are an absolute evil, irrespectively of the results they may produce.

26. In paragraph 50 of the despatch it is stated, with respect to State outlay on railways and defensive works, that "so far as estimates have yet been sanctioned, it is anticipated that only 275 lakhs will remain unspent after 31st March 1887." This statement is based on the last column in Appendix C, at page 43 of the Financial Statement. We would point out that the figures in Appendix C show that on estimates not worked up to there remains a balance to spend of 330·6 lakhs, and to add that this larger figure may be exceeded.

27. The last sentence of paragraph 50 contains a ruling, negating the utilisation of refunds which formed the basis of the proposals for completing the grouped scheme of works submitted in our Despatch No. 264 F., dated 22nd September 1885. We have addressed Your Lordship on this question in a different connection in our Despatch in the Financial Department, No. 47 of 22nd February 1887, and need therefore say nothing upon it in this place.

That despatch also dealt with the subject of Famine Insurance. Regarding the provision of funds for the Mandalay Railway, mentioned in paragraph 51, our views were stated in our telegram in the Public Works Department of 21st January 1887.

ENCLOSURE OF DESPATCH No. 65 OF 1887,

A.

*Statement showing Expenditure on Build*

HEADS AND SUB-HEADS.	1875-76.	1876-77.	1877-78.	1878-79.	1879-80.	1880-81.	1881-82.
MILITARY WORKS.	£	£	£	£	£	£	£
India . . .	1,337,738	1,202,322	1,153,933	1,190,593	966,307	969,168	1,070,546
England . . .	...	...	...	...	...	...	...
Exchange . . .	...	...	...	...	...	...	...
TOTAL MILITARY WORKS .	1,337,738	1,202,322	1,153,933	1,190,593	966,307	969,168	1,070,546
CIVIL WORKS, INDIA.							
Imperial . . .	817,317	284,698	320,650	273,265	324,595	340,654	466,613
Provincial . . .	1,330,274	1,692,491	1,454,917	1,586,350	1,426,056	1,694,294	2,003,131
Local . . .	1,593,797	1,275,273	1,210,053	1,173,196	1,040,084	1,212,438	1,391,756
TOTAL INDIA .	3,241,388	3,252,462	2,985,620	3,032,811	2,790,735	3,256,386	3,861,500
England . . .	94,435	90,920	96,642	97,540	140,045	88,249	96,018
Exchange , . .	10,369	15,481	14,915	20,725	28,338	17,882	19,809
TOTAL CIVIL WORKS .	3,346,192	3,358,863	3,097,177	3,151,076	2,959,118	3,362,517	3,977,327
GRAND TOTAL .	4,683,930	4,561,185	4,251,110	4,341,669	3,925,425	4,331,685	5,047,873
AVERAGES .	4,622,557		4,379,552				

*11th January 1887.*

## DEPARTMENT OF FINANCE AND COMMERCE.

*ings and Roads from 1875-76 to 1886-87.*

1883-83.	1883-84.	1884-85.	Revised Estimate, 1885-86.	Budget Estimate, 1886-87.	GRAND TOTAL.	Average.	Percent- age on Total.
£	£	£	£	£	£	£	£
962,547	1,012,303	943,344	985,400	1,152,300	12,946,501	1,073,875	22'56
1,771	5,825	5,071	8,600	2,300	23,567	1,964	'04
406	1,331	1,232	2,709	767	6,445	537	...
964,724	1,019,459	949,647	996,709	1,155,367	12,976,513	1,081,376	22'60
502,780	1,005,360	465,186	373,100	621,000	5,309,218	442,435	9'24
2,302,087	2,125,906	2,001,151	1,709,200	1,952,800	21,278,657	1,773,222	37'04
1,460,587	1,553,757	1,510,883	1,525,400	1,617,100	16,564,324	1,380,360	28'83
4,265,454	4,685,023	3,977,220	3,612,700	4,190,900	43,152,199	3,596,017	75'11
82,238	86,515	66,300	71,100	77,300	1,087,302	90,608	1'89
18,865	19,770	16,110	22,401	25,767	230,432	19,203	'40
4,366,557	4,791,308	4,059,630	3,706,201	4,293,967	44,469,933	3,705,828	77'40
5,331,281	5,810,767	5,009,277	4,702,910	5,449,334	57,446,446	4,787,204	100'00
5,260,714							

## B.

*Opening and Closing Balances under Provincial and Incorporated Local Funds from 1875-76 to 1886-87.*

YEARS.	PROVINCIAL FUNDS.		INCORPORATED LOCAL FUNDS.		TOTAL.	
	Opening balances.	Closing balances.	Opening balances.	Closing balances.	Opening balances.	Closing balances.
	£	£	£	£	£	£
1875-76 . . .	702,395	325,230	1,148,274	1,114,856	1,850,669	1,440,086
1876-77 . . .	325,230	399,136	1,114,856	927,070	1,440,086	1,326,206
1877-78 . . .	399,136	765,389	927,070	928,111	1,326,206	1,693,480
1878-79 . . .	(a) 721,182	1,216,631	(a) 972,298	1,199,113	1,693,480	2,415,744
1879-80 . . .	1,216,631	1,723,311	1,199,113	1,301,705	2,415,744	3,025,016
1880-81 . . .	(b) 1,740,374	1,950,056	(b) 1,284,842	1,386,271	3,025,016	3,336,327
1881-82 . . .	1,950,056	3,705,046	1,386,271	1,146,497	3,336,327	4,851,543
1882-83 . . .	3,705,046	2,608,229	(c) 1,127,971	1,010,641	4,833,017	3,618,870
1883-84 . . .	(d) 2,648,628	2,118,405	(e) 987,435	1,044,639	3,636,061	3,163,094
1884-85 . . .	(f) 2,115,095	1,862,511	(g) 1,029,918	989,413	3,145,013	2,851,924
1885-86, Revised Estimate . . .	1,862,511	2,018,911	989,413	993,313	2,851,924	3,012,224
1886-87, Budget Estimate . . .	2,018,911	1,211,811	993,313	985,713	3,012,224	2,197,524

(a) £44,187 transferred from Provincial.

(b) £17,063 transferred to Provincial.

(c) £18,526 transferred to Excluded Local.

(d) £40,179 and 218 transferred from Local and Excluded Local respectively.

(e) £40,179 transferred to Provincial and £16,973 transferred to Local.

(f) £3,310 transferred to Local.

(g) £18,081 transferred to other Funds, less, £3,310 transferred from Provincial.

*11th January 1887.*

## C.

*Statement of Capital Outlay not charged to Revenue, showing sources from which funds have been provided.*

	Amount.	Total.		Amount.	Total.
	₹	₹		₹	₹
1882-83. Balance of grant brought forward from 1881-82 . . .	64,89,514		Expenditure during 1882-83 . . .	2,25,87,859	
„ Fixed grant for the year . . .	2,50,00,000				
1883-84. Fixed grant for the year . . .	2,50,00,000		Expenditure during 1883-84 . . .	3,01,49,051†	
„ Recovery from Provincial Funds during the year . . .	33,88,032				
„ Recovery from Provincial Funds outlay incurred in previous years . . .	49,97,868				
1884-85. Fixed grant for the year . . .	3,50,00,000		Expenditure during 1884-85 . . .	4,03,50,034	
„ Contribution from Surplus Provincial balances . . .	13,92,064				
1885-86. Fixed grant for the year . . .	3,50,00,000		Expenditure during 1885-86 . . .	4,95,80,590	14,26,67,534
„ Contribution from Surplus Provincial balances . . .	7,78,265				
„ Extra grant for Frontier Railways (Rs. 1,37,00,000—72,28,034*) . . .	64,71,966				
„ Indian Midland Railway Refund . . .	46,75,660	14,81,91,369	Expenditure during 1886-87 (present grant, excluding special) . . .	4,96,66,000§	
1886-87. Fixed grant for year . . .	3,50,00,000				
„ Extra grant for the Frontier Railways . . .	48,06,755†				
„ Contribution from Surplus Provincial balances . . .	68,000		Expenditure during 1886-87 (special grant for Mandalay Extension) . . .	20,00,000	5,16,66,000
„ Mysore Railway Refund . . .	68,68,245†				
„ Extra grant for Sind-Pishin Railway . . .	14,25,000	4,81,66,000			
			Balance . . . . .		4,23,885
„ Special grant for Mandalay Extension . . . . .		20,00,000			
TOTAL . . . . .		19,83,57,369	TOTAL . . . . .		19,83,57,369

\* This sum of Rs. 72,28,034 is equivalent to a grant of the lapses on Revised Estimate of 1884-85 (Rs. 18,76,534) not originally re-granted + a recoupment of the net reductions (Rs. 53,51,500) in normal grant made early in the year in consequence of Military necessities.

† Excess over normal grant provided in Forecast . . . . . ₹ 1,70,75,000

Deduct—

	₹
For Frontier and Coast Defences . . . . .	54,00,000
Mysore Railway Refund . . . . .	68,68,245
	<u>1,22,68,245</u>
Balance . . . . .	<u>48,06,755</u>

‡ Excludes a book debit of Rs. 52,13,343. ~ Outlay on Non-Productive Works in past years transferred to Productive in the accounts of 1883-84.

§ The extra grant of 10 lakhs for the Sind-Sagar Railway has been here included, but the Budget provision of the same amount for Bezwara Extension has been rescinded by the order of the Secretary of State.

12th January 1887.

## D.

*Statement of Public Works and other Capital Outlay, and the sources whence it was derived, 1859 to 1887.*

Capital Outlay on Public Works—				1867-68 to 1883-84.	1884-85 to 1886-87.	Revised Estimate, 1886-87.	Budget Estimate, 1886-87.	REMARKS.
				£	£	£	£	
Railways, State (a)	.	.	.	34,393,236	11,352,753	4,343,900	4,127,100	(a) Excludes debt created or incurred in the purchase of the East Indian, Eastern Bengal, and Sind, Punjab and Delhi Railways.
Irrigation and Navigation	.	.	.	16,078,224	2,016,498	617,100	700,000	
Defence Works	.	.	.	.	390,000	...	390,000	
Bombay Special Works	.	.	.	1,133,303	...	...	...	
	.	.	.	52,104,822 (b)	14,259,252	4,964,000	5,217,100	(b) Outlay by the State commenced only in 1867-68
Deduct—Paid from Revenue (Surplus Revenue)				...	...	...	—469,500 (d)	(c) Deficit as per Estimate on Loss by Exchange on Productive Public Works 569,100
Paid from Famine Insurance for reduction of debt				2,639,843	1,763,904	673,900	748,500	3,459,900
TOTAL				2,639,843	1,763,904	673,900	279,000	182,200
Balance of Capital Outlay to be raised	.	.	.	49,164,979	12,495,348	4,290,100	4,038,100	(d) Surplus as per Estimate on Loss by Exchange on Productive Public Works . . . .
Advances to Municipalities, &c. (net)	.	.	.	7,900,027	773,049	—100,500	807,600	
Guaranteed and Subsidized Railways (net)	.	.	.	—1,051,528	—204,642	—3,848,800	3,163,000	
	.	.	.					
Total, being the supposed requirements for Public Works from borrowed money as exhibited by Secretary of State	.	.	.	55,613,478	12,973,755	341,000	8,397,700	—469,500
Deficit in Ordinary Revenue	.	.	.	1,351,810	4,070,135	3,459,900 (e)	...	
Cash Balance increased (+) or decreased (—)	.	.	.	+2,157,314	—4,231,997	+2,390,000	—4,086,700	
	.	.	.	59,122,602	12,920,953	6,190,900	4,899,000	
TOTAL AMOUNT ACTUALLY BORROWED						...	...	
Annual Average	.	.	.	3,477,800	4,273,651	...	...	

*12th January 1887.*

## E.

Statement showing the Direct Annual Gain or Loss to the State from Outlay on open and unopened Railways since 1880-81.

Y <sup>EAR</sup> .	EXCLUDING EXCHANGE. (£1 = R10.)							Total Loss to State, in- cluding Ex- change.
	GUARANTEED RAILWAYS.			STATE RAILWAYS.			Total Gain to State.	
	Net Traffic Receipts less Mortgages of Surplus Pro- fits paid to Companies.	Guaranteed Interest.	Loss or Gain to State — or +	Net Traffic Receipts.	Interest and Annuity.	Loss or Gain to State — or +		
1880-81	2,555,060	3,201,951	—708,893	3,300,084	2,571,051	+729,033	+31,151	—928,728
1881-82	3,282,294	3,271,771	+10,523	3,493,843	3,005,704	+488,139	+438,572	—143,327
1882-83	3,095,566	3,317,972	—222,416	3,692,710	3,102,533	+470,178	+212,792	—911,708
1883-84	3,113,197	3,340,762	—227,565	4,408,342	3,340,314	+1,068,028	+107,443	—281,513
1884-85	3,046,806	3,210,880	—200,085	4,245,055	3,581,530	+663,525	+60,431	—807,992
1885-86	3,327,866	3,270,502	+57,364	5,080,076	3,895,690	+1,184,377	+1,181,411	—511,166
1886-87, Budget	2,716,000	2,601,000	+225,000	5,234,100	4,800,280	+433,820	+175,000	—1,552,300
TOTAL	21,141,187	22,310,749	—1,178,561	29,933,210	24,515,049	5,418,161	4,239,000	—6,066,424

NOTE.—The figures in column "Interest and Annuity" include a certain sum representing redemption of Capital, which, though payable from revenue, should not, strictly speaking, be taken into account when considering the net revenues of Railways. The amounts so included are—

	£	£
1880-81	14,180 or including exchange	29,271
1891-92	"	32,140
1892-93	"	37,070
1893-94	"	45,222
1894-95	"	45,543
Revised Estimate, 1895-96	"	55,113
Budget Estimate, 1896-97	"	60,000
TOTAL	238,045	300,287

A. G. BEGHIE, Major, R.E.,  
Offg. Acct.-Genl., P. W. Dept.



## REMARKS ON STATEMENT E.

This statement gives the progressive annual gain or loss to the State since 1880-81 on the entire railway transactions (Guaranteed, Subsidized, and State) in which it is interested, exchange being excluded in the details entered. A column is added at the end of the Table, to show the effect of exchange. The net result to the State appears slightly worse than it really should be, owing to the inclusion in the column "Interest and Annuity" of a sum representing the redemption of capital of the East Indian Railway and Eastern Bengal Railway. Excluding this, the gain would be raised from £4,239,600 to £4,477,645, or, including exchange, the loss would be reduced from £5,066,424 to £4,766,137.

The falling off in 1886-87 is due mainly to the interest charges on the very large capital expenditure on the frontier railways, which for the present at least is wholly unproductive.

When exchange is taken into account the gains are converted into losses, and the gross gain of £4,239,600 accruing in the septennial period commencing with 1880-81 becomes a loss of £5,066,424.

To exchange, therefore, may be traced, in the seven years, a total charge of £9,306,024, which may be subdivided as follows:—

<i>Guaranteed Railways.</i>		£
Increased cost of remitting Guaranteed interest . . . .		5,524,005
<i>State Railways.</i>		
Increase in working expenses . . . . .		206,835
Increase in interest charges due to including exchange in capital cost . . . . .		3,575,184
	TOTAL .	3,782,019
	GRAND TOTAL .	9,306,024

A still further loss has probably occurred in State Railways on account of the increased cost of remitting the interest on the portion of sterling loan for which they are liable. It is impossible to state this figure with accuracy, and, as a set-off against it, it may be remarked that the interest entered in the statement as chargeable to State Railways is calculated throughout at 4 per cent., whereas of late years sterling loans have undoubtedly been raised at a lower rate.

It may be added that in this statement the interest column under State Railways includes the actual sterling payments made on account of interest on stock debentures and annuities of all the guaranteed lines now taken over. On debentures discharged in India and on further capital outlay  $4\frac{1}{2}$  per cent. is charged.

An attempt has been made to calculate the loss on remittance of interest charges during 1885-86. The result is shown in the foot-note to Statement F to be £11,97,551, as also the basis of the calculation.

On the other hand, it is not possible to estimate what overcharge has been made by taking the all-round rate of interest at 4 per cent.

It should be noted that this statement puts the case in the most unfavour-

		Excluding Exchange.	Including Exchange.	able light, for under the head "State Railways" it includes all the capital locked up
		£	£	
At actual rates of interest payable under contracts	Southern Mahratta	205,400	412,400	
	Indian Midland	104,000	36,800	
	Bengal Central	27,500	372,538	
At four per cent.	State Railways proper, unopen	372,538	709,438	
		709,438	821,538	

unproductively in unopen lines. The interest for the year 1886-87 is estimated (on the Budget Estimate figures) at the amounts shown in the margin.

21st January 1887,

A. G. BEGBIE.

**F.**  
*Statement showing the Annual Gain or Loss to the State from Railway Outlay since 1880-81.*  
 (Including Exchange.)

YEAR.	GUARANTEED RAILWAYS.			STATE RAILWAYS.			Total Loss or Gain to State — or +
	Net Traffic Receipts less Moieties of Surplus Profits paid to Companies.	Guaranteed Interest.	Loss or Gain to State — or +	Net Traffic Receipts.	Interest and Annuity.	Loss or Gain to State — or +	
	£	£	£	£	£	£	
1880-81 . . . . .	2,555,069	3,921,412	—1,366,343	3,283,763	2,856,148	+427,615	—928,728
1881-82 . . . . .	3,282,204	3,945,306	—663,012	3,001,952	3,362,207	+360,255	—149,327
1882-83 . . . . .	3,085,456	4,077,125	—991,669	3,618,146	3,577,885	+40,261	—941,408
1883-84 . . . . .	3,118,197	4,047,246	—929,049	4,378,643	3,731,107	+647,536	—231,513
1884-85 . . . . .	3,046,805	4,028,654	—981,849	4,206,317	4,032,460	+173,857	—807,992
1885-86 . . . . .	3,327,366	4,233,110	—905,744	5,055,154	4,600,566	+454,588	—511,150
1886-87, Budget . . . . .	2,716,000	3,590,900	—874,900	5,273,400	5,849,800	—576,400	—1,452,300
TOTAL . . . . .	21,141,187	27,843,753	—6,702,566	28,726,375	28,090,233	+636,142	—5,066,224

G.

Statement showing the Returns realised from Railways

RAILWAYS.	CAPITAL OUTLAY.				
	Direct Outlay.	Exchange.	Total.	Indirect Charges.	Total Capital Outlay, including Indirect Charges.
1	2	3	4	5	6
<b>OPEN LINES.</b>					
	R	R	R	R	R
East Indian	39,13,61,560	...	39,13,61,560	...	39,13,61,560
Deduct:—Surplus Profits payable to Company in respect of Earnings for 1885.	...	...	...	...	...
<b>NET EARNINGS ACCRUING TO GOVERNMENT.</b>	...	...	...	...	...
Rajputana-Malwa . . . . .	8,70,13,446	37,26,860	9,07,40,306	12,37,765	9,19,78,071
Holkar . . . . .	1,28,28,482	1,74,100	1,40,02,582	2,66,804	1,32,69,386
Bewari-Ferozepore . . . . .	1,81,81,480	8,09,390	1,26,90,870	1,12,137	1,28,08,007
Deduct:—Surplus Profits payable to Bombay, Baroda and Central Indian Railway Company in respect of Earnings for 1885.	...	...	...	...	...
<b>NET EARNINGS ACCRUING TO GOVERNMENT.</b>	...	...	...	...	...
Scindia . . . . .	89,49,441	2,52,050	92,01,491	1,58,879	93,60,370
Wardha Coal . . . . .	67,77,787	2,03,020	69,80,817	80,279	70,61,096
Nagpore-Chhattisgarh . . . . .	1,08,67,069	5,89,180	1,14,26,189	1,67,992	1,16,84,181
Burma . . . . .	2,72,86,413	12,50,730	2,85,37,143	4,31,936	2,89,69,079
Eastern Bengal . . . . .	5,90,66,850	2,24,710	5,92,91,560	1,75,337	5,94,66,897
Northern Bengal . . . . .	2,19,09,262	8,63,030	2,27,72,292	3,94,830	2,31,67,122
Dacca . . . . .	60,10,031	3,06,560	63,16,591	31,927	63,48,518
Tirhoot . . . . .	1,45,82,225	6,88,480	1,52,70,705	1,59,908	1,54,30,613
Patna-Gya . . . . .	40,23,637	1,58,100	41,81,737	47,316	42,28,953
Nalhati . . . . .	3,43,035	11,880	3,54,895	6,000	3,60,895
Dildarnagar-Ghaziipur . . . . .	7,02,988	120	7,03,108	13,992	7,17,100
Cawnpore-Achnera . . . . .	1,14,86,250	3,65,580	1,18,51,830	1,87,678	1,20,19,508
Bareilly-Pilibhit . . . . .	14,48,499	42,070	14,90,569	18,050	15,08,619
North-Western (Indus Valley and Punjab Northern Railways only).	16,35,45,460	57,41,630	16,82,87,090	27,01,933	17,09,89,023
Amritsar-Pathankot . . . . .	55,79,644	27,770	56,07,414	82,837	56,90,251
Dhond and Manmad . . . . .	1,02,64,509	6,56,990	1,09,21,499	1,94,876	1,11,16,375
<b>TOTAL . . . . .</b>	<b>85,49,28,078</b>	<b>1,60,62,180</b>	<b>87,09,90,258</b>	<b>64,40,376</b>	<b>87,74,30,634</b>
Deduct:—Surplus Profits payable to Companies.	...	...	...	...	...
<b>NET TOTAL . . . . .</b>	<b>...</b>	<b>...</b>	<b>...</b>	<b>...</b>	<b>...</b>

during 1885-86 (April 1885 to 31st March 1886).

REVENUE.					Percentage of column 7 on column 2.	Percentage of column 8 on column 4.	Percentage of column 11 on column 6.	REMARKS.
Net Earnings.	Loss by Exchange.	Net Earnings allowing for Loss by Exchange.	Indirect Charges.	Net Earnings, less indirect Charges.				
7	8	9	10	11	12	13	14	15
£	£	£	£	£				
3,01,10,731 19,29,859	...	3,01,10,731 19,29,859	...	3,01,10,731 19,29,859	7.69 ...	7.69 ...	7.69 ...	This sum includes the premium paid on purchase of the undertaking from the Company.
2,81,80,872	...	2,81,80,872	...	2,81,80,872	7.20	7.20	7.20	
79,60,995 4,36,836	...	79,16,995 4,36,836	...	79,16,995 4,36,836	7.09 ...	6.80 ...	6.71 ...	
74,80,159	...	74,80,159	...	74,80,159	6.69	6.42	6.34	This Capital outlay includes the premium paid on purchase of undertaking from the Company.
1,99,680 1,29,682 5,29,420 6,47,916 16,82,988 8,64,553 -66,337 3,73,494 2,45,709 12,086 22,191 1,66,526 17,230 84,15,000	... ... ... 6,850 1,41,720 20,680 80 3,520 ... 780 ... 2,130 ... 74,190	1,99,680 1,29,682 5,29,420 6,41,066 15,41,269 8,43,873 -66,417 3,66,974 2,45,709 11,306 22,191 1,64,398 17,230 88,40,810	... 6,063 13,459 40,400 21,457 43,092 5,472 28,193 ... 3,050 ... 16,606 ... 1,58,496	1,99,680 1,29,682 5,12,981 8,00,666 15,19,812 8,00,781 -71,889 3,40,781 2,45,709 8,256 22,191 1,47,790 17,230 61,82,314	2.23 1.91 4.87 2.37 2.85 3.95 -1.10 2.56 6.11 3.52 3.15 1.45 1.19 5.17	2.17 1.88 4.63 2.25 2.59 3.70 -1.05 2.42 5.87 3.19 3.15 1.39 1.15 4.96	2.13 1.75 4.43 2.07 2.55 3.46 -1.13 2.21 5.81 2.29 3.09 1.22 1.14 4.78	
48,135 2,20,623	... ...	48,135 2,20,623	2,237 ...	45,898 2,20,623	.86 2.15	.85 2.02	.81 1.98	
5,15,36,603	2,49,950	5,12,56,653	3,42,525	5,09,44,128	6.03	5.89	5.81	
23,66,695	...	23,66,695	...	23,66,695	...	...	...	
4,91,69,908	...	4,69,19,958	...	4,85,77,433	5.75	2	5.65 53	

These figures are approximate, as from 1st January 1886 the S. P. and D. Ry. became State Line: and the figures for the last quarter of the year under review, relating to the S. P. and D. Ry. have been estimated on the best available data and excluded from the annual results.

## Statement showing the Returns realised from Railways

RAILWAYS.	CAPITAL OUTLAY.				
	Direct Outlay.	Exchange.	Total.	Indirect Charges.	Total Capital Outlay, including Indirect Charges.
1	2	3	4	5	6
(OPEN LINES CONSTRUCTED FROM PROVINCIAL FUNDS.)					
Jorhat . . . . .	5,34,151	...	5,34,151	...	5,34,151
Kannia-Dhuria . . . . .	9,60,771	...	9,60,771	939	9,61,710
UNOPEN LINES.					
Katni-Umeria . . . . .	37,72,480	1,20,080	38,92,560	15,315	39,07,855
Assam-Bihar-Tirhoot Section . . . . .	29,13,320	96,340	30,10,160	21,754	30,31,914
Ditto, Assam-Bihar Section . . . . .	44,04,045	2,83,940	46,87,985	30,415	47,18,400
Nagpore-Bengal . . . . .	16,31,453	70	16,31,523	48,743	16,80,266
Banaghat-Bhugwangola . . . . .	2,93,653	...	2,93,653	13,122	3,06,775
Cuddapah-Nellore . . . . .	31,21,859	2,42,570	33,64,429	68,250	34,32,679
Bellary-Kistna . . . . .	82,84,339	4,91,440	87,75,779	99,153	88,74,932
Sutlej Bridge (Ferozepur) . . . . .	16,91,945	59,640	17,50,985	10,814	17,61,799
Sind-Sagar—Eastern Section . . . . .	11,81,877	1,01,900	12,83,777	842	12,84,619
Ditto, Western Section . . . . .	55,30,589	12,13,380	67,43,969	71,252	68,15,201
Sind-Pishin—Nari-Quetta Section . . . . .	2,80,74,942	29,00,860	2,59,75,792	86,847	2,60,62,439
Ditto, Bostan-Gulistan Section . . . . .	1,28,045	...	1,28,045	652	1,28,697
Ditto, Durwaza-Quetta Section . . . . .	4,65,412	...	4,65,412	6,348	4,71,760
Bolan . . . . .	24,57,140	1,16,890	25,73,930	12,536	25,86,366
Kandahar Reserve Permanent-way . . . . .	18,91,538	...	18,91,538	...	18,91,538
Stores . . . . .	68,84,510	...	68,84,510	...	68,84,510
TOTAL . . . . .	6,77,27,047	56,26,860	7,33,53,907	4,85,843	7,38,39,750
(UNOPEN LINES UNDER CONSTRUCTION FROM PROVINCIAL FUNDS.)					
Chera-Companygunj . . . . .	5,26,134	...	5,26,134	...	5,26,134
Lucknow-Sitapur . . . . .	14,47,122	80	14,47,202	51,511	14,98,713

NOTE.—The accounts for 1885-86 not being finally closed, some minor alterations hereafter are assumed that any increase in the progressive total of sterling loans is due solely to the con increased cost of remittance of interest due to the falling exchange on such increase in sterling tion the average percentage is reduced from 5.53 to 5.39.

It should also be stated that in making these calculations the interest to be remitted has been figure.

10th January 1887.



No. 104 (Financial), dated 31st March 1887.

From—The Secretary of State for India,

To—The Government of India.

Immediately on the receipt of Your Excellency's letter, dated the 22nd of February, No. 47, I considered in Council the questions treated therein which have a bearing on the Budget Estimates for 1887-88; and, on the 15th of March, I despatched to Your Excellency the following telegram:—

Budget for 1887-88. Method of stating accounts, &c.

"Your Financial Despatch No. 47. I approve proposals to include Upper Burma charges in expenditure against Revenue, and continue suspension of Famine Insurance. In absence of substantial surplus, exchange should not be taken higher than 1s. 5½d. Further reduction of expenditure should first be most carefully considered; but, if it is really found impracticable, deficit must be met by borrowing in India or by increased taxation. In view of these instructions, report your conclusions, for my approval, before decision is taken. As to Railway Expenditure, I will write fully; meantime see closing paragraphs of Despatch, 29th July last, No. 216."

2. I now proceed to explain more fully my views on the subjects with which the letter dealt; and I must, in the first place, express my regret that the reference to me should have been so long delayed as to afford very brief time for consideration, and to render it impossible for your Government to receive the full expression of my views before the publication of the Financial Statement.

3. In the 4th paragraph of your letter a comparison is made with the position at the commencement of 1885-86, when you observe that the finances were in a state of equilibrium, and you now find the position altered in the following aspect:—

	Tens of Rupees.
<i>Better.</i> —Imposition of Income Tax . . . . .	800,000
Increased Net Railway Receipts . . . . .	1,000,000
Reduction of Expenditure: not less than . . . . .	500,000
Suspension of Famine Insurance grant . . . . .	1,250,000
<b>TOTAL</b>	<b>3,550,000</b>
<i>Worse.</i> —Permanent Increase of Military Expenditure . . . . .	1,500,000
Exchange, taken at 1s. 5½d., as compared with 1s. 7d. . . . .	1,250,000
Upper Burma: Military charges . . . . .	700,000
"          "      Net Civil charges . . . . .	500,000
<b>TOTAL</b>	<b>3,950,000</b>

The deficit was therefore estimated at 400,000*l.* after including 1,200,000*l.* for additional charges in Burma: but I am glad to learn, from your telegram of the 16th March, that the position has since improved to the extent of about 650,000*l.*

The reduction of expenditure, in so far as it will affect the result of the year, is stated to be "not less than 500,000*l.*" I am aware of the efforts that have been made by the Commission on Reduction of Expenditure to obtain a material improvement of the revenues and diminution of charges: and I trust that, when your Government shall have had time fully to consider all the recommendations of the Commission, you will find that the result is an improvement of your position to a considerably greater amount than you now contemplate.

4. The temporary suspension of the Famine Insurance grant was suggested in Lord Randolph Churchill's Despatch of the 27th of August 1886, No. 239;

and, though at the time deprecated by your Government, was subsequently proposed as an alternative preferable to the imposition of further taxation in 1886-87. On similar grounds it appears necessary to continue the suspension in 1887-88, since, as is observed by Your Excellency (in paragraph 11), "in the presence of deficit, the Famine Insurance scheme, which assumes the existence of a surplus, becomes . . . inoperative, and . . . it is misleading and inexpedient to maintain it in the accounts, as though it were still in full vigour."

5. You estimate that your expenditure will be reduced, by the suspension of this grant, to the extent of 1,250,000*l.* The charge for interest payable to the Indian Midland and Bengal-Nagpur Railway Companies, which, under the terms of the 16th paragraph of Lord Randolph Churchill's Despatch of the 10th of December 1885, No. 367, is included under this grant, is estimated in 1887-88 at 166,500*l.*, and may prove to be more if the permission given to shareholders in the latter company to pay up their calls in full is largely accepted; so that not less than 22 lakhs will be required for this purpose.

6. In the 16th paragraph of Your Excellency's letter, I observe a statement that "the Irrigation grant may be deemed hypothecated towards the interest of the Bengal-Nagpore Railway." From Table VII in Appendix IV of the Financial Statement for 1886-87, however, it would seem impossible to withdraw the expenditure from the Protective Irrigation Works already commenced; and, therefore, the relief to your finances by the absorption of the Famine Insurance grant seems unlikely to be so much as 125 lakhs.

7. In my telegram of 15th of March, I indicated my opinion that it would not be right to take the rate of exchange higher than 1*s.* 5½*d.* per rupee, in the absence of a substantial surplus. It is not desirable to make an unduly low estimate of the course of exchange, which in itself may have a somewhat depressing effect; but a high rate should not be adopted unless the estimate shows a surplus sufficient to provide against any probable fall. In my subsequent telegram of the 17th March, I consented to your renewed recommendation that 1*s.* 5½*d.* should be adopted on the condition that the result of the Budget is a surplus of not less than 20 lakhs; but I am glad to learn that since that it has been found practicable to adopt the rate of 1*s.* 5½*d.*

8. It was proposed by some of the members of your Government to exclude from the charges of the year so much of the additional outlay in Burma, estimated at 1,200,000*l.* as it may be necessary to provide by loan; but I have no hesitation in accepting Your Excellency's opinion that the whole of that expenditure must be charged against revenue.

9. The instances quoted in Sir Theodore Hope's Minute in support of his view do not, in my opinion, justify the course he advocates. In the case of the English fortifications, the money was provided by the issue of terminable annuities, by which means the whole of the charge payable during each year was included in the Expenditure chargeable against Revenue, and no addition was made to the permanent debt. When the policy of borrowing for the construction of large public works was first sanctioned, Viscount Cranborne, in a Despatch of the 28th of February 1867, No. 79, authorised the outlay on important trunk roads, barracks, and remunerative works, being included among the extraordinary charges of the year; but, before the accounts for the year 1867-68 had been completed, the permission was modified, and Sir Stafford Northcote's Despatch of the 9th of July 1868, No. 288, directed that only Irrigation Works and Special Fund Works (to which Railways were afterwards added) should be shown as Public Works Extraordinary. Moreover, the ex-



penditure incurred in the special improvements at Bombay was in 1880-81 transferred to be a charge against Revenue, and the outlay on the Madras Harbour, which had also been for a time treated as extraordinary, was similarly refunded in a subsequent year, so that up to the date of the latest accounts, those for 1884-85, the Public Debt has been clearly divided into two portions, the one representing the money expended in the construction or purchase of Railways and Irrigation Works, and the other being the amount required for all other purposes.

10. When the urgent necessity arose for placing the North-West Frontier in a satisfactory condition of defence, the Earl of Kimberley, while in his Despatch of the 27th of November 1884, No. 148, agreeing that the expenditure on the railway might be provided from borrowed money, declined to treat the cost of the military roads otherwise than as charges on the revenue. In the following year Lord Randolph Churchill, in his Despatch of the 10th of December 1885, No. 367, consented to the charge for the frontier and coast defences being also met from loans, and it was subsequently agreed to open a new head of "Special Defence Works" outside the ordinary account.

11. I think that this decision must be reconsidered; the expenditure is not excessive, being estimated at only 209 lakhs in the course of six years; and even though this amount may be exceeded, it is, in my opinion, not desirable that any outlay of a character not directly calculated to produce revenue should be omitted from the charges of the year. I have accordingly to request that in the accounts for 1886-87 and subsequent years the cost of the frontier and coast defences may be included in the expenditure on Military Works chargeable against Revenue, and that the only charges excluded may, in the future as in the existing accounts, be those for the construction of railways and major irrigation works, of which the cost is met from borrowed money, and from which direct returns are obtained.

12. Your Excellency will perceive that this decision does not prejudice the

Despatches to India :—

26th Nov. 1862, No. 196, para. 14.

9th May 1865, No. 114, para. 7.

8th Nov. 1865, No. 252, para. 15.

23rd July 1874, No. 387, para. 52.

18th Nov. 1880, No. 384, paras. 7 and 8.

23rd Dec. 1880, No. 437, para. 4.

question whether in any particular year some part of the charges against Revenue may not be met from loan. The position has been repeatedly defined by successive Secretaries of State, as will

be seen by reference to the passages mentioned in the margin, and Your Excellency, in the 6th paragraph of your letter, draws a similar conclusion, when you say that, while railways and canals may be excluded from the charge against the revenue, in the case of roads and buildings, you have no choice between meeting the expenditure at once from the current revenue or creating a charge against that of future years, so that, whether the existing revenue is, or is not, sufficient to meet the charges, they ought not to be represented as if there were no obligation on the revenue to meet them.

13. The question whether, when the revenue is insufficient to cover the expenditure, it is expedient to meet the deficiency by imposing taxation, or by borrowing, is one to be determined on a consideration of the special circumstances of the case. When, last year, the enlarged scale of the operations in Burma, coupled with the great fall in the gold price of silver, swept away the surplus provided in the Budget, and made it apparent that there would be a considerable deficit, but one of uncertain amount, Your Excellency deprecated the imposition of taxation in the middle of the year, if it could possibly be avoided, and Her Majesty's Government entirely concurred in your view. It is, however, a different matter to begin the year with the anticipation of a

deficit; and, while I was very unwilling to press upon your Government an increase of taxation which you considered impolitic, I was anxious that no practicable means should be abandoned of producing a sufficient surplus of revenue to afford the necessary margin for the contingencies of the year. Accordingly, in my telegram, I urged Your Excellency most carefully to consider whether further reductions of expenditure cannot be enforced, failing which I left it to Your Excellency to determine whether you would meet the deficit by a loan to be raised in India, or by an increase of taxation.

14. Since sending the telegram above mentioned, I have learnt with much satisfaction that you now anticipate that there will be no deficit.

15. I shall deal with the subject of the expenditure on railways in a separate despatch.

No. 128 (Military), dated 12th May 1887.

From—The Secretary of State for India,

To—The Government of India.

In my Military Despatch, No. 24, of the 27th January 1887, I conveyed the

Defensive works for India.

full sanction of Her Majesty's Government to all the measures proposed by

Your Lordship's Government for the adequate defence of the North-West Frontier; and I added an expression of their earnest hope that the measures to which sanction had thus been accorded might be pushed forward to completion with the least possible delay.

2. I am by this mail sending to Your Lordship separate despatches on the subject of the armaments required for the defensive works at Aden, Bombay, Karachi, and Rangoon, in which you are informed of the measures I have taken for the provision of the several classes of guns required by your Government for the works designed, and, I trust, now under construction. I have also addressed you recently on the subject of the protection of Madras from attack by sea.

3. From the despatches above referred to, as well as from others of earlier date on similar subjects, Your Lordship will have learnt that Her Majesty's Government have throughout been most anxious to afford all possible aid in furtherance of the measures proposed for the effective protection of India from external attack. The actual progress made in realising this has, however, fallen far short of what might have been expected; and I now desire to impress on your Government, in the strongest possible manner, the deep sense I entertain of the positive need of carrying those measures to completion with the greatest promptitude.

4. Doubtless there is room for wide difference of opinion in respect to the numerous points of detail which necessarily arise in dealing with the question of defensive works suited to meet the modern appliances of attack; but it is hardly possible that the schemes which, after long consideration, have been prepared by your Defence Committee, aided by the advice of engineer officers specially selected for their knowledge of the more recent theories and practice of fortification, should fail in any essential particular; and I consider it most undesirable that, in the search for an ideally perfect plan, any delay should be allowed to interfere with the prosecution of schemes which are at least practical, and calculated, so far as our present knowledge extends, to afford a fair measure of protection from such attacks as may reasonably be anticipated, and to which

circumstances may at any moment expose us. At this moment we have no such protection.

5. I desire, therefore, to urge on your Government the paramount importance of applying all your resources to pressing forward and carrying out at once the defensive works already decided on. The designs of those not already settled should be at once completed, and orders given for the immediate commencement of the works. In every case this course should be followed; such modifications being introduced during construction as may appear to be called for, in preference to prolonged discussion by different authorities before operations are set in hand.

6. Your Lordship alone can decide the most effective mode—whether by a special defence department for all India under your direct authority, or through the existing organisation—for giving effect to this course, which, I repeat, should be followed up with unintermitting energy until it is carried to an early completion.

7. I desire at the same time to assure you of my undeviating support in any measure you may decide on for giving immediate effect to this most important duty, merely requiring on the part of your Government that I may be furnished with an adequate report, each quarter, of the progress made in the several works of frontier and coast defence, and of the prospect of their completion, with such returns of probable and actual cost as the circumstances of the case admit.

8. Your Lordship being thus fortified by the strong expression of my opinion as to the paramount importance of these works will, I trust, find little difficulty in making provision for the requisite funds; bearing in mind that, in doing so, you will not prejudice the true financial interests of the country, which, in my judgment, will be best served by following the course I have indicated.

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No. 134 (Financial), dated the 4th June 1887.

From—The Government of India,

To—The Secretary of State for India.

We have the honour to acknowledge receipt of Your Lordship's Financial Despatch No. 104, dated 31st March 1887, regarding certain questions arising out of the Financial Statement for 1887-88. Your Lordship has expressed approval of the decision at which the majority of our Government arrived and which we communicated in our Despatch No. 47, dated 22nd February 1887, to the effect that the expenditure in connection with Upper Burma should be shown in our accounts as expenditure chargeable to Revenue, so as to be taken into reckoning before the declaration of surplus and deficit upon the year's accounts.

2. Your Lordship, however, instructs us to adopt a similar course with retrospective effect in respect of the Special Defence Works now in progress the expenditure on which we were authorised in the Despatch of Lord Randolph Churchill, No. 367, dated 10th December 1885, to meet from Loan funds and to charge to a special head outside the ordinary account. We do not desire to enter into a discussion as to the correctness of this decision, and we should be prepared with a reservation which we will hereafter explain, to apply it to accounts of future years. But we desire to obtain from Your Lordship a reconsideration of the instructions conveyed to us that the decision should be applied to the accounts of the years 1886-87 and 1887-88. The financial arrangements of these two years were, under the authority of the Secretary of State in Council, arranged upon the basis of the exclusion of these charges from the Revenue Account, and in the Financial Statements of 1886-87 and of 1887-88 the question now raised was not even alluded to as one of doubt. If the result

were of small moment, we might accept Your Lordship's decision with retrospective effect, but its operation in the present case in all probability would be to convert into deficit the narrow surplus arrived at in the Budget and Revised Estimates of 1886-87 and in the Budget Estimate of 1887-88. The subject, therefore, cannot fail to receive a considerable share of public attention, and no explanation of the real history of the case will save our financial management from the suspicion of having obtained the show of equilibrium in our finances in the past and present year by the deliberate omission of an important item of expenditure; or, at the least, from the charge of having neglected to make provision in our estimates for an item of expenditure which we should have regarded as obligatory. We are entitled, it will doubtless be conceded, to have our financial measures judged by the principles upon which we were authorised to frame them; and the order of December 1885, which was a material factor in the decisions arrived at by us with reference to the financial arrangements of 1886-87 and 1887-88, should, therefore, hold good with reference to the accounts of these two years. It seems to us, moreover, that it would be most impolitic, at a time when we have many real financial difficulties to face, and when it is especially desirable that we should take all measures to maintain our financial credit, to add to our difficulties by adopting, after the year's estimates have been prepared and published, a change of practice which will be cited as a fresh instance of the uncertainty attaching to all estimates of Indian Finance. The time has gone by when any practical measures could be taken, so far as regards the years 1886-87 and 1887-88, to meet in anticipation the financial consequences of the decision proposed by Your Lordship. To the adoption, on the other hand, of taxation during the course of the current year for the sole purpose of meeting expenditure resulting entirely from a change in our system of accounting since that year commenced, we are strenuously opposed. We therefore unanimously urge that, whatever practice may be adopted as regards the future, matters should remain as they are for the present year. The decision on which we have hitherto acted has been justified in published documents as a necessity arising from special temporary causes, and has been accepted by the public. A departure from it should be undertaken deliberately as a question of future financial policy, and should not (as certainly it need not) be declared in the form of an admission of error in the past.

3. As regards the future, we have already said that we do not desire to discuss the question whether we ought to show as charges against our revenue the expenditure upon Special Defence Works. We submit to Your Lordship's decision that as a general abstract principle this is the proper course to follow. We have, however, no immediate prospect of being able, if we adopt this plan, to avoid the declaration of a succession of deficits for at least the next two or three years. Your Lordship has become aware, from paragraphs 12 to 22 of our Financial Department No. 47, dated 22nd February last, that we are all, with the exception of Sir Auckland Colvin, agreed as to the necessity of completing the railways remaining on our programme as indispensable for protection against famine, and of providing for the interest on their cost even by excluding from our Revenue account, if need be, certain items of capital outlay now charged to it. The addition to that account of 40 or 50 lakhs per annum for special defences would apparently convert the probability of deficit to a certainty. Under these circumstances, the alternatives presented to us would be either to reduce the outlay on the defences, or to meet it in one of two ways, by loan with recognition of a deficit, or by additional taxation.

4. To each of these courses we feel that there are very serious objections.

We believe that it is politically and financially sound policy to incur the contemplated charge for Defence Works, as also to incur it promptly, and continuously as the progress of the works demands. Under present political prospects, the postponement of putting ourselves in an effective condition for meeting eventualities is imprudent and hazardous. It is just as true now, as when stated in paragraph 12 of our Secret Despatch, No. 25 of 22nd September 1884, that the best way of deferring complications on our North-Western Frontier is to make timely preparation against them.

Again, we feel serious objections to showing a deficit which would be attributed by the public to the Defence Works, and would call down the hostile criticism of all those who are opposed to the general policy of preparation and defence. As a matter of policy it seems desirable to carry out these works as quietly as possible.

Finally, we have the strongest conviction of the impolicy of any present increase of taxation for this purpose, and believe that the political consequences of that measure outweigh in their importance any arguments in its favour which may be deemed valid from an account point of view. New taxation should, in our opinion, be reserved for much greater emergencies, as for example the outbreak of war, when it might be resorted to without any of the agitation and discontent which its imposition at the present time would be likely to produce. Even the admission of a deficit arising out of these works, and a consequent resort to loan, would be preferable to the imposition of taxation in order to cover it.

5. In view of the various considerations above set forth, we would submit our very strong recommendation that the method of meeting the special defence charges out of the normal loan previously sanctioned for Public Works only, which was recommended unanimously in our Despatch No. 264 (Financial), dated 22nd September, and approved in Lord Randolph Churchill's reply No. 367 (Financial), dated 10th December 1885, may be allowed to remain in force, not only for the past and current years, as urged in the 2nd paragraph of this despatch, but until the completion of the Defence Works, or any earlier period, when our finances may have happily attained such a satisfactory and stable condition as will admit of their being charged to revenue without interference with due provision for famine railways, or the exhibition of a deficit.

6. Sir A. Colvin agrees that there is no practical prospect of being able, if we adopt the plan desired by Your Lordship, to avoid the declaration of a deficit for the next two or three years. He believes that it is both politically and financially sound policy to incur the existing special expenditure, but, at the same time, he concurs in the impolicy of any present increase of taxation for this purpose. He would meet the expenditure from Revenue, as far as is consistent with any decision which may be arrived at by Your Lordship on the questions contained in our Despatch No. 47 F., dated 22nd February last, and from loan so far as Revenue consistently with the measures rendered necessary by such decision proved insufficient. Should this entail upon us a deficit, or a succession of deficits, he thinks that they must be accepted as the necessary outcome, in our circumstances, of Your Lordship's decision. The closing paragraphs of Your Lordship's despatch may possibly be held to indicate the connexion between the present question and that of the increased taxation; and if it is Your Lordship's intention to call on us to increase taxation in India, with the view of furnishing funds from Revenue to provide for the Special Frontier Defences, Sir A. Colvin prefers the charge of financial error in showing the expenditure outside the account to the risk of adding to the present weight of

taxation. This consideration apart, and in the event of our learning that, in Your Lordship's opinion, any deficit arising from this source will be treated as exceptional and due to the urgency of completing the measures necessary for the defence of India, he is prepared to accept for future years the course indicated to us by Your Lordship.

No. 199 (Financial), dated 28th July 1887.

From—The Secretary of State for India,

To—The Government of India.

I have considered in Council Your Excellency's letter, dated the 4th of June, No. 134, desiring a reconsideration of the decision communicated in the 11th paragraph of my Despatch of the 31st of March, No. 104, that the cost of constructing the Special Defence Works, though necessarily in a great degree provided from borrowed money, should in the accounts be included in the expenditure chargeable against Revenue.

Method of entering in the accounts the outlay on Special Defences.

2. My decision was based on the principle previously laid down that the only charges excluded from the expenditure charged against the revenue of the year should be those for the construction of railways and works of irrigation, from which direct receipts are obtained; and that it was undesirable to make any exception to this rule. Your Government submits to the decision that, as a general abstract principle, this is the proper course to follow; but you are unanimously of opinion that it should not be applied to the last and present years, of which the Estimates have been already prepared and published in such a manner as to show a surplus only obtained by the exclusion of this expenditure; and with the exception of Sir Auckland Colvin, you would desire that a similar course should be followed in future, unless, before the completion of these works, such a surplus is secured as will admit of the cost being charged against Revenue, without interfering with your programme for the construction of railways considered indispensable for the protection of the country against famine, and without creating a deficit.

3. I regret that I am unable to accept your proposal. For the reasons stated in my former despatch, I am satisfied that the course which I have prescribed, and which in principle you accept, is the proper method of entering the expenditure in the accounts; and I cannot agree to state it in any other manner, in order that an appearance may be thereby given of a surplus which has no existence in reality.

4. I shall, however, take care that, when the exposition of the finances of India is made to Parliament this year, it is clearly explained that your Government was justified in preparing the Estimates in the manner in which you published them, and that the alteration is due to a subsequent decision by Her Majesty's Government.

5. Further, I desire briefly to repeat what was stated in my Despatch of the 31st of March, that the question whether, when revenue is insufficient to cover necessary expenditure, it is expedient to meet the deficiency by imposing taxation, or by borrowing, is one to be determined on a special consideration of the circumstances of the case; and to add that I am not less satisfied than Your Excellency's Government of the importance of the early and continuous prosecution of the works of defence now in question, and of the necessity for providing the funds required for this purpose, though I differ from you as to the manner in which the expenditure on them should be shown in the public accounts.

Telegram, dated 11th August 1887.

From—Secretary of State, London,

To—Viceroy, Simla.

Proposed outlay on railways and irrigation works from borrowed money so greatly exceeds authorised limit that, without delaying progress of works essential for Military or Political purposes, or stopping works actually in hand, outlay proposed on other works, addition to or improvement in open lines, on store or in irrigation, must be revised with a view to reduction by one crore. Despatch follows.

Telegram, dated 24th August 1887.

From—Viceroy, Simla,

To—Secretary of State, London.

Your telegram 11th August. Desired reduction of crore rupees quite impossible within limits indicated and at this advanced period of the year. We therefore strongly urge that no decision on this matter be announced to Parliament. Full explanation will promptly follow receipt of promised despatch.

Telegram, dated the 25th August 1887.

From—Secretary of State, London,

To—Viceroy, Simla.

Your telegram of the 24th of August, Financial. Large reduction absolutely necessary. If crore impossible, telegraph largest reduction you can make.

Telegram, No. 125 A.G., dated the 9th September 1887.

From—Viceroy, Simla,

To—Secretary of State, London.

Your telegram of 25th August last. Total of items liable to reduction from Railway grant for lines under construction 79 lakhs, and Irrigation 70 lakhs. Cannot stop works now arranged for so as to produce saving more than 15 lakhs, or ten per cent. Open line grants already reduced largely in Budget. Further reductions impossible.

No. 216 (Financial), dated 18th August 1887.

From—The Secretary of State for India,

To—The Government of India.

I have considered in Council Your Excellency's letter, dated the 18th of April, No. 75 (Railway), forwarding a programme of the outlay which you

*Note.*—RX = tens of rupees.

propose to incur on State Railways during 1887-88, an analysis of which, under main heads, gives the following result:—

	RX
Frontier Lines . . . . .	1,304,000
Burma Extension . . . . .	1,095,000
Protective Lines . . . . .	454,800
Assam-Bihar Railway . . . . .	191,970
Bezawada Junction with the Nizam's Railway . . . . .	140,400
Open Line Capital . . . . .	818,540
Stores and Working Capital, including Reserve . . . . .	288,190
Surveys . . . . .	1,300
TOTAL	<u>4,29,4200</u>

2. To meet this expenditure, your Government consider the following sums to be available:—

Amount entered in Forecast forwarded to the Secretary of State with Finance letter No. 264, dated 22nd September 1885, and approved in Despatch No. 367 of 10th September 1885. . . . .	R 2,69,50,000
Contribution by the Government of the North-Western Provinces and Oudh, from Surplus Provincial balances, for outlay on the Bareilly-Philibhit State Railway during 1887-88 . . . . .	20,000
Estimated outlay on the Tounghoo-Mandalay Extension of the Burma State Railway [ <i>vide</i> letter No. 148 (Railway), dated 20th September 1886, to the Secretary of State] . . . . .	1,00,00,000
Outlay on the Railway from Bezwada to the Hyderabad Frontier during 1886-87, which will be paid for in 1887-88 . . . . .	2,75,000
Addition on account of proposed short outlay by Military Department on special Defence Works . . . . .	15,50,000
	<hr/> 3,87,95,000
Exchange debit to the Capital Accounts of Railways . . . . .	41,47,000
	<hr/> 4,29,40,000
TOTAL AS BEFORE . . . . .	<hr/> <hr/>

3. The whole of this amount, of upwards of 429 lakhs of rupees, is to be provided from borrowed money, and, as appears from your Financial Statement, is in addition to 70 lakhs that are to be supplied in like manner for works of irrigation. The total of about 5 crores of rupees is so much in excess of the sum of  $3\frac{1}{2}$  crores which your Government have been authorised to borrow for Public Works in any one year, that I have felt it to be necessary to consider carefully whether so large an expenditure is compatible with the exigencies of the present financial position, and how far the sums which you hold to be available for meeting it may be properly regarded as applicable to the purpose.

4. Anxious as I am to extend, as fast as practicable, the construction of railways, whether for the defence of the North-Western Frontier or the extension of such communications in Burma, for the protection of the country from famine, or for the promotion of the commercial and industrial progress of the country, I cannot but think that there appears to have been some misapprehension on the part of your Government as to the scope and intention of orders on the previous forecasts of expenditure submitted to the Secretary of State in Council, as your proposals so greatly exceed the limit of 350 lakhs, which, at a much more favourable time, was fixed as the maximum that it would be prudent to borrow in any one year for Public Works.

5. In replying, on the 27th of November 1884, to the letters of the Government of India, No. 25 (Secret), and No. 150 (Railway), dated the 22nd and 29th of September 1884, explaining their views in regard to railway construction, including the system of railways and other works designed for the defence of the North-West Frontier, Lord Kimberley observed that "the rapidity with which the works necessary for these purposes shall be constructed must manifestly depend on financial considerations;" and he directed that the frontier communications and defences should be completed as speedily as was consistent with economy of construction, their cost being defrayed as far as possible from revenue, and only from borrowed money when the revenue should prove insufficient; and, in view of the urgency of the requirements, he consented to the



extension of the maximum amount of borrowing for Public Works in any one year, from 250 to 350 lakhs of rupees, that being, in his opinion, "the extreme limit to which it is prudent to pledge our resources for such purposes," a point on which he subsequently enlarged in another despatch, dated the 30th of April 1885, No. 112 (Financial).

6. In a letter of the 22nd of September 1885, No. 264, your Government feeling the urgent necessity for pressing on the frontier railways, combined with the importance of not discontinuing the famine lines which had been already begun, which called for an expenditure in excess of the limit of borrowing that had previously been prescribed, made proposals for meeting a total outlay of 2,643½ lakhs to be expended on railways in the following five years, of which 877½ lakhs were needed for frontier lines, 538½ lakhs for protective lines in progress, 447½ lakhs for similar lines not to be begun till 1888-89, and 780 lakhs for lines under agreement with companies, open lines, and stores and working capital. Lord Randolph Churchill, in his reply, dated the 10th of December 1885, No. 367 (Financial), assented to the proposal that 456 lakhs should be provided by borrowing, in 1886-87, for railways, irrigation, and defensive works; and he at the same time agreed that for the next five years any interest becoming payable to Guaranteed Companies formed for the purpose of constructing the special railways which had been designed by your Government as essential for the protection of the country against famine might be treated as a deduction from the allotment annually made for Famine Insurance. In other respects he gave no opinion on the proposals relating to years subsequent to 1886-87.

7. Turning now to the actual progress recently made in railway construction, I find that, on the 31st of March 1884, the number of miles of open railway was 10,832½, while the sanctioned mileage was 14,290. The length open on the 31st of March 1887 appears from the Administration Report for 1886-87 to have been 13,390 miles, and that sanctioned to have been 16,596. Thus, the addition made in the three years to the open mileage was 2,558; and a further length of 2,306 miles has been sanctioned, of which 627 are comprised in the military defence system, 987 miles have been allotted to companies, and 692 are being constructed by the Government, by Native States, or from Provincial revenues. These results cannot be regarded as unsatisfactory.

8. Next I find that the annual average capital outlay, combining that by the Government and by companies guaranteed or subsidised by the Government, was stated in the Report of the Select Committee to have been 4,370,000*l.* (conventional sterling) from 1874-75 to 1878-79, and 4,845,000*l.* from 1879-80 to 1883-84. According to the manner in which the Accounts and Estimates

\* Annual average.

	1874-75 to 1878-79.	1879-80 to 1883-84.	1884-85 to 1887-88.
	R <i>X</i>	R <i>X</i>	R <i>X</i>
State Railways .	3,449,989	3,946,496	5,149,648
Companies' Lines	1,192,344	1,267,140	4,112,534
<b>TOTAL .</b>	<b>4,642,333</b>	<b>5,213,636</b>	<b>9,262,182</b>

† Bengal and North-Western.  
West of India Portuguese.  
Nizam's.  
Mysore.  
Jodhpore.  
Wadhwan-Morvi.

are now stated, so as to include Exchange on capital outlay in England, the figures for the years from 1874-75 to 1887-88 would be those given in the margin\* (see the enclosed Statement A), showing an increase from R*X* 4,642,333 in the first period, and R*X* 5,213,636 in the second, to no less than R*X* 9,262,182 as the average for the four years from 1884-85 to 1887-88, excluding the lines† which are

being constructed by Native States, or without a guarantee from the Government. Thus it appears that in the last period of five years the average rate of expenditure for these objects has been very nearly double what it was between 1874 and 1879, and that the financial liability arising from this outlay is borne by the revenues of India as completely as though the whole of the funds had been directly borrowed by the State.

9. As regards the financial position generally, the Budget for 1884-85 showed a surplus of RX 319,300, after providing RX 1,750,000 for Famine Insurance, so that virtually there was, according to that estimate, a surplus of RX 2,069,300 available for expenditure on Public Works or Reduction of Debt, if not needed for other purposes. The actual accounts were not so favourable; but the surplus of revenue over other expenditure was still in that year RX 1,330,246.

10. Viewing the expenditure of 1885-86 as having been to a large extent of a temporary and exceptional character, in connection with the Quetta Field Force and the Burma Expedition, your letter of the 22nd of February last, No. 47, refers to the commencement of 1885-86 as a time when your finances were in a state of equilibrium, and the Budget for that year showed a surplus of revenue over other expenditure amounting to RX 2,631,600, or about RX 1,300,000, better than the accounts of the previous year.

11. But in that letter Your Excellency reports that the expenditure has since been increased by RX 1,500,000 for the permanent augmentation of the Army, and RX 1,200,000 for the Military and Civil charges in Upper Burma,

* Exchange at 1s. 5½d. on £14,632,100 =	RX	5,444,743
Ditto in 1884-85 =		3,426,424
Increase		<u>2,008,319</u>

† Budget of 1885-86: Surplus of Revenue over Expenditure, excluding Famine Insurance and Construction of Railways.	RX	2,631,600
Alterations: Worse . . . . .	RX	4,700,000
Better . . . . .		<u>2,300,000</u>
Apparent Surplus		<u><u>231,600</u></u>

to which must be added RX 2,000,000 on account of Exchange.\* Against this total of RX 4,700,000 may be set RX 800,000 from the imposition of the Income Tax, RX 1,000,000 from increased net Railway receipts, and RX 500,000 from reduction of expenditure, or RX 2,300,000 in all; so that the financial position for the present year

is worse than it was two years ago by RX 2,400,000, and consequently there is no surplus revenue available for the construction of Public Works, either under Famine Insurance or otherwise, nor for the reduction of the usual loan, and, on the contrary, even the moderate surplus of RX 231,600,† to which the above figures would lead, is not likely to be realised.

12. I now return to a consideration of the proposals that you have made for the allotment of borrowed money to the Public Works Department in the present year. You commence with a sum of 269½ lakhs, which is said to be the amount entered in the Forecast approved by Lord Randolph Churchill. I have pointed out that His Lordship did not approve the Forecast, or sanction the proposed expenditure, as respects the year subsequent to 1886-87. That Forecast was based on the supposition that it would be practicable to allot to the railways and special defences 280 lakhs of borrowed money, and 50 lakhs of revenue from the Famine Insurance grant; but, excepting the payments of interest to the Indian-Midland and Bengal-Nagpore Railway Companies, which in 1887-88 require RX 228,000, you have not been able to make any provision from revenue for these purposes. To the above-mentioned sum of 269½ lakhs

you add 100 lakhs for the Toungoo-Mandalay Railway, regarding which you were informed in Lord Kimberley's Despatch of the 29th of July 1886, No. 216, paragraph 51, that the funds must, if possible, be found by the postponement of operations on other lines of railway, or of some other expenditure not equally urgent, and no authority was conveyed for providing for the outlay by any special addition to the sum to be borrowed. As to the 15½ lakhs which will not be required for the Special Defence Works, and which you have regarded as applicable to railway construction, I must observe that a reduction of such expenditure affords no justification for an increase on the proposed outlay on railways. The two small sums of R2,75,000 and R20,000 call for no comment.

13. To the total of these amounts R3,87,95,000, you add R41,47,000 on account of Exchange on the English expenditure. In the 21st paragraph of Lord Kimberley's Despatch of the 29th of July 1886, No. 216, it was recognised that, for comparison with the sum of 350 lakhs authorised as outlay from borrowed funds in the old form of account, it was necessary now to add the Exchange; and, therefore, I do not object to a suitable increase of the amount now to be authorised. In future, however, I desire that, whatever sum may be recognised as the limit of borrowing for such works, it shall be considered to include the Exchange, for otherwise the anomalous and dangerous position will arise that, in proportion as the value of the rupee measured in gold falls, the amount to be borrowed for Public Works will increase.

14. A consideration of all the circumstances to which I have referred has satisfied me that while, on the one hand, very satisfactory progress has been made, and an unusually large expenditure undertaken for railway construction during the last few years; on the other hand the important surplus of revenue which had been available for Famine Insurance, and for meeting unforeseen charges, has entirely disappeared, that additional taxation has already been necessary, and that the prospect of the imposition of further charges cannot be disregarded. The conclusion has therefore been forced upon me that some reduction must be made in the outlay which you contemplate, and as regards the current year the amount available from borrowed funds should be taken as follows:—

	R
Authorised annual outlay for Railways and Irrigation works . . . . .	3,50,00,000
Bareilly-Philibhit Railway . . . . .	20,000
Bezawada Line . . . . .	2,75,000
Exchange, say . . . . .	40,00,000
<b>TOTAL</b> . . . . .	<b><u>3,92,95,000</u></b>

or, say, 400 lakhs, as compared with the sum of R4,99,42,000 proposed in the Budget; and I have accordingly to request that the estimated expenditure on Railways and Irrigation Works this year, not provided from revenue, may be so revised as to reduce the amount of outlay to four crores of rupees. I will not attempt to apportion between Railways and Irrigation, or to the various works, the sum by which the Estimates must be reduced; but I feel convinced that, without interfering with the progress of what may be essential for Military or Political purposes, or stopping works actually in hand, your Government will be able to curtail to the necessary extent the outlay proposed on other works, additions to or improvements of the open lines, on stores, on irrigation, or by postponement of work to a future year.

15. I most fully recognise the very great value of the Railways already constructed in India, and the important development of the resources of the country to which they have so largely contributed. No less strongly do I feel the obligation to do all in my power to facilitate and expedite their extension within the limits of what is financially possible. I trust, therefore, that the pressure which has led me most reluctantly to require some reduction of the proposed expenditure in the present year may at no distant date be relieved, and that the early completion of those lines of communication which are of most pressing necessity will, before long, admit of the prosecution of others which must for a time be postponed.

16. I shall, moreover, continue to hope that the sustained evidence of the generally satisfactory financial results of railway working in India may induce capitalists to invest in these undertakings without a Government guarantee. The Government of India will always afford every facility to *bonâ fide* investors, but its power to accept financial responsibilities in connection with such enterprise is obviously limited, and it cannot be expected to carry out every railway that may be shown to be useful, at its own risk or through its own agency. I would also add that, now that the main lines of communication throughout British India are either completed or in a fair way towards completion, I should welcome any measures that led to the gradual addition of shorter and less costly branch lines, on any appropriate gauge, which would serve to supply more fully the means of cheap transport and its attendant benefits to all parts of the country.

17. With regard to the proposed railways in the south of India, which were mentioned in Sir Auckland Colvin's Minute, and in your letter of the 22nd of February, No. 47, I have now before me your subsequent letters of the 16th of May, Nos. 94 and 95 (Railway), suggesting that negotiations should be opened with the Southern Mahratta and South Indian Railway Companies, for the purpose of taking over these lines; and I have caused communications to be addressed to these companies on the subject.

18. I have not on the present occasion taken into consideration the outlay on Special Defences, as I shall await a reply to my before-mentioned Despatch of the 12th of May last, in the Military Department. It was explained in my Despatch of the 31st of March, No. 103 (Financial), paragraph 11, that such expenditure was in future to be included in the expenditure on Military works chargeable against revenue; but I am aware that, as this may involve a deficit on the year, the money may have to be supplied by borrowing.

19. As it is important that you should be informed of my decision regarding the outlay on railways in the present year at as early a date as possible, I addressed to Your Excellency, on the 10th instant, the following telegram:—

“Proposed outlay on Railways and Irrigation Works from borrowed money so greatly exceeds authorised limit that without delaying progress of works essential for Military or Political purposes, or stopping works actually in hand, outlay proposed on other works, additions to or improvements of open lines, on stores, or in irrigation, must be revised with view to reduction by one crore. Despatch follows.”

## STATE

Statement showing approximately the Capital Outlay in each of the under or subsidized

	1874-75.	1875-76.	1876-77.	1877-78.	1878-79.
<b>STATE RAILWAYS.</b>					
Payments in England . . . . £	1,030,754	739,389	616,118	1,140,549	683,406
Converted into Indian Currency at drawing rate . . . . RX	1,116,518	820,574	721,024	1,323,495	828,616
Payments in India . . . . „	2,013,620	2,449,790	2,282,346	2,835,575	2,808,387
<b>TOTAL CAPITAL OUTLAY ON STATE RAILWAYS . . . . „</b>	<b>3,150,198</b>	<b>3,270,364</b>	<b>3,003,370</b>	<b>4,209,070</b>	<b>3,637,003</b>
<b>GUARANTEED RAILWAYS.</b>					
Net payments in England . . . . £	1,174,897	1,163,498	1,222,844	1,792,483	1,786,235
Converted into Indian Currency at drawing rate . . . . RX	1,272,655	1,291,251	1,431,057	2,069,116	2,165,775
Repayments in India, as shown in Sterling at Contract rates . . . £	1,478,020	1,550,507	1,850,670	1,953,933	2,309,819
Converted into Indian Currency at Contract rates . . . . RX	1,603,041	1,682,741	2,006,181	2,119,070	2,503,866
Additional Credit for Stores charged to Revenue Account . . . . „	...	...	...	...	...
Repayments in India . . . . „	1,603,041	1,682,741	2,006,181	2,119,070	2,503,866
Net payments in England, less repayments in India . . . . „	330,386	391,490	576,124	49,954	338,091
Payments in India, as shown in Sterling at Contract rates . . . £	1,341,369	1,383,516	1,358,890	1,518,632	1,536,207
Converted into Indian Currency at Contract rates . . . . RX	1,424,570	1,480,157	1,452,030	1,632,523	1,667,487
<b>TOTAL CAPITAL OUTLAY ON GUARANTEED RAILWAYS . . „</b>	<b>1,094,184</b>	<b>1,088,667</b>	<b>876,906</b>	<b>1,583,569</b>	<b>1,310,396</b>
<b>SUBSIDIZED RAILWAYS.</b>					
Net payments in England . . . . £	...	...	...	...	...
Converted into Indian Currency at drawing rate . . . . RX	...	...	...	...	...
Payments in India:					
Bengal Central Railway, as shown in Sterling . . . . . £	...	...	...	...	...
Exchange . . . . . RX	...	...	...	...	...
Southern Mahratta Railway (including Mysore Railway), as shown in Sterling . . . . . £	...	...	...	...	...
Exchange . . . . . RX	...	...	...	...	...
Indian Midland Railway, as shown in Sterling . . . . . £	...	...	...	...	...
Exchange . . . . . RX	...	...	...	...	...
...	...	...	...	...	...
<b>TOTAL CAPITAL OUTLAY ON SUBSIDIZED RAILWAYS . . „</b>	<b>...</b>	<b>...</b>	<b>...</b>	<b>...</b>	<b>...</b>
<b>TOTAL CAPITAL OUTLAY ON RAILWAYS . . . . „</b>	<b>4,224,322</b>	<b>4,359,031</b>	<b>3,880,276</b>	<b>5,791,639</b>	<b>4,956,399</b>

## MENT A.

*mentioned years on Railways, by Government and by Companies guaranteed by Government.*

1879-80.	1880-81.	1881-82.	1882-83.	1883-84.	1884-85.	1885-86.	Revised Estimate, 1886-87.	Budget Estimate, 1887-88.
782,175	1,265,375	802,816	448,416	769,825	1,077,705	1,787,175	1,344,000	1,355,000
940,446 3,833,092	1,521,779 4,009,509	968,438 2,376,905	551,279 1,679,262	945,738 2,907,115	1,339,579 3,396,531	2,349,726 3,584,157	1,843,200 3,716,200	1,853,300 12,50,900
4,773,538	5,530,288	3,345,243	2,230,561	3,852,553	4,736,110	5,833,893	5,559,400	4,360,200
1,256,417 1,510,650	941,782 1,132,616	1,041,022 1,253,786	1,046,483 1,286,539	1,473,138 1,909,768	1,391,270 1,729,337	1,628,033 2,140,491	908,300 1,245,700	1,103,500 1,613,400
2,205,588	1,525,394	1,450,531	1,829,370	1,732,940	1,791,715	1,865,766	1,768,900	1,396,100
2,389,919 123,020	1,648,655 103,121	1,563,971 67,729	1,978,724 102,006	1,873,709 103,489	1,935,381 116,158	2,014,205 160,365	1,907,500 150,000*	1,500,000 150,000*
2,512,939	1,751,779	1,631,700	2,180,730	1,977,188	2,051,539	2,174,570	2,057,500	1,650,000
1,002,289 1,298,731 1,399,514	619,163 1,018,402 1,089,600	375,914 1,081,944 1,155,124	794,191 1,193,760 1,276,426	167,439 1,597,722 1,692,680	322,202 1,535,504 1,620,787	34,079 1,461,838 1,516,249	811,800 1,238,900 1,310,000	136,600 1,298,600 1,380,000
397,225	470,437	779,210	482,235	1,525,248	1,298,585	1,512,170	498,200	1,243,400
...	...	170,000	320,476	460,820	361,853	261,037	765,700	1,652,300
...	...	205,071	393,991	568,122	449,781	344,387	1,050,100	2,266,000
...	...	...	148,666 31,834	129,885 30,115	...	Nagpore- Railway ...	...	361,950 116,650
...	...	...	579,995 113,963 395	408,116 73,630 63	727,095 136,656 650	771,050 134,557 335	1,636,050 364,480 120	579,150 88,350 ...
...	...	...	...	...	...	635,166 153,454	829,700 149,600	960,890 141,700
...	...	...	874,353	641,806	864,401	1,699,562	2,979,950	2,243,600
...	...	205,071	1,268,344	1,207,928	1,314,152	2,043,949	4,030,050	4,509,600
5,170,763	6,000,725	4,329,524	3,981,140	6,586,029	7,348,877	9,490,002	10,087,650	10,122,20

nated.

## STATEMENT B.

*Statement showing the Net Charge on the Revenues resulting from Railways.*

YEAR.	Gross Earnings.	Working Expenses.	Net Traffic Receipts.	CHARGES.						Total charges.	Net charges.
				INTEREST AND ANNUITIES.				Payments to Companies for Surplus Pro- fits, Land, Control, and Surveys.	Advances of Interest to Assisted Companies repayable (net).		
				England.		Exchange.	Total.				
				India.	£						
1874-75	RX 8,318,541	RX 4,103,695	RX 4,214,846	RX 339,438	4,609,772	RX 383,500	RX 5,332,770	RX 490,326	...	RX 5,823,096	1,008,260
1875-76	8,669,040	4,292,361	4,377,285	466,946	4,606,012	505,743	5,578,703*	357,313	...	5,930,015	1,558,700
1876-77	10,282,022	5,077,878	5,204,146	583,241	4,636,768	789,502	6,009,511	340,842	...	6,350,353	1,140,207
1877-78	12,728,684	5,914,688	6,813,996	725,107	4,635,491	715,393	6,075,901	889,155	...	6,964,146	150,150
1878-79	11,254,191	5,746,327	5,507,864	877,918	4,689,276	906,379	6,563,673	1,019,986	..	7,583,569	2,075,695
1879-80	12,053,331	6,154,399	5,898,932	1,043,133	4,736,876	958,495	6,798,504	730,903	...	7,469,410	1,570,478
1880-81	13,010,809	6,696,000	6,314,809	1,255,477	4,591,671	930,412	6,777,560	581,299	...	7,358,859	1,044,050
1881-82	14,891,271	7,188,971	7,702,800	1,468,434	4,857,111	1,002,028	7,327,573	657,885	2,426	7,987,884	285,584
1882-83	15,199,957	7,783,559	7,416,398	1,662,135	4,874,661	1,118,214	7,655,010	1,054,965	12,263	8,722,258	1,305,800
1883-84	16,104,800	7,865,082	8,246,718	1,882,790	4,798,952	1,096,611	7,778,363	742,372	30,905	8,551,630	304,912
1884-85	16,025,898	8,179,982†	7,845,916	2,105,756	4,791,148	1,164,210	8,061,114	791,355†	44,621	8,897,091	1,051,176
1885-86	17,769,427	8,817,586	8,950,841	2,231,931	5,066,807	1,594,886	8,893,624	789,049	119	9,682,551	731,713
1886-87 (Revised)	17,896,900	8,693,000‡	9,203,900‡	2,424,400	5,284,400	1,962,600	9,671,400	966,200‡	...	10,637,800	1,438,700
1887-88 (Budget)	18,423,800	9,214,000†	9,214,000†	2,790,500	5,361,900	1,991,600	9,944,000	918,100†	58,700	10,893,400	1,589,400

\* After deducting £980 received in England, and RX 98 exchange thereon.

† The sum of RX 30,000 has been deducted from the column of Surplus Profits, &c., in 1884-85, and added to that of Working Expenses, as the estimated contribution to the Provident Fund of the East Indian Railway Company.

‡ The sums of XR 215,000 and XR 211,500 have been deducted from Working Expenses of State Railways in 1886-87 and 1887-88 respectively, and added to the column of Surplus Profits, &c., as the estimated amount payable to the East Indian Railway Company on account of Surplus Profits.

No. 57 P. W., dated 10th October 1887.

From—The Government of India,

To—The Secretary of State for India.

We have the honour to acknowledge the receipt of Your Lordship's De-

Telegram, dated 11th August 1887.

From—Secretary of State, London,

To—Viceroy, Simla.

Proposed outlay on Railways and Irrigation Works from borrowed money so greatly exceeds authorised limit that without delaying progress of works essential for Military or Political purposes, or stopping works actually in hand, outlay proposed on other works, addition to or improvement in open lines, on stores or in irrigation, must be revised with a view to reduction by one crore. Despatch follows.

Telegram, dated 24th August 1887.

From—Viceroy, Simla,

To—Secretary of State, London.

Your telegram, 11th August Desired reduction of crore rupees quite impossible within limits indicated and at this advanced period of the year. We therefore strongly urge that no decision on this matter be announced to Parliament. Full explanation will promptly follow receipt of promised despatch.

Telegram, dated 25th August 1887.

From—Secretary of State, London,

To—Viceroy, Simla.

Your telegram of the 24th August, Financial. Large reduction absolutely necessary. If crore impossible, telegraph largest reduction you can make.

Telegram No. 125 A.G., dated 9th September 1887.

From—Viceroy, Simla,

To—Secretary of State, London.

Your telegram of 25th August last. Total of items liable to reduction from Railway grant for lines under construction 79 lakhs, and Irrigation 70 lakhs. Cannot stop works now arranged for so as to produce saving more than 15 lakhs, or 10 per cent. Open line grants already reduced largely in Budget. Further reductions impossible.

The nature of this supposed misapprehension is explained in paragraphs 5 and 6 of the despatch. Certain remarks of Lord Kimberley's are first cited, to show that 350 lakhs was fixed as "the extreme limit to which it is prudent to pledge our resources" for "Public Works." Lord Randolph Churchill's Despatch No. 357 (Financial), of 10th December 1885, is then interpreted as giving no opinion on the forecast for years subsequent to 1886-87, which we had included in our No. 264F., of 22nd September 1885.

The subject of paragraph 6 is pursued in paragraph 12, in which, after repeating that the forecast of September 1885 was not approved or sanctioned by Lord Randolph Churchill, it is pointed out (1) that this Forecast proceeded on the supposition that 50 lakhs of revenue would be available from the famine Insurance grant; (2) that paragraph 51 of Lord Kimberley's No. 216 of 29th

Despatch, No. 216, Financial, dated the 18th August 1887, written in further explanation of the telegram received from Your Lordship on 11th August last, which last, together with the subsequent telegraphic communications that passed on the subject, are reproduced in the margin for facility of reference.

2. In this despatch is given an analysis of the programme of Railway outlay from Loan funds for the current year sent in our Despatch (No. 75R., dated 18th April), regarding which Your Lordship remarks that the amount involved, together with the usual 70 lakhs for irrigation, so greatly exceeds the normal limit of 3½ crores of rupees which we are authorised to borrow in any one year, that some misapprehension must evidently exist as to the scope and intention of the orders on the previous forecasts of expenditure submitted by us.



July 1886 gave us no authority to provide for the Mandalay Railway in addition to the normal annual limit for borrowed money; and (3) that if 15½ lakhs were not required for the Defence Works, the fact afforded no justification for the expenditure of the amount on Railways.

3. We submit, however, that the previous correspondence on the subject appears to us to warrant every expectation that the programme would have received Your Lordship's unqualified approval, thus—

- (a) In Lord Kimberley's Despatch No. 148R., dated 27th November 1884, from which a quotation is made in the 5th paragraph of the despatch under reply, it is remarked that "it is a prudent and a really economical measure to plan and to carry into execution, with as little delay as possible, a system of railways and roads designed to strengthen our military position on the North-West Frontier; and also that it is desirable to complete a well-devised scheme for preserving the country from the effects of famine and for increasing the facilities of commerce. But the rapidity with which the works necessary for these purposes shall be constructed must manifestly depend on financial considerations."

But in paragraph 9 of the same despatch Lord Kimberley directed that the Frontier lines should be pushed on "with the utmost energy consistent with economy in construction;" in paragraph 5 he expressed his hope that these lines would be completed within four years; and in paragraph 13 he directed that they must receive a preferential right to funds over the famine or other railways. We were thus fully warranted in assuming that the Frontier Railways, &c., were to be deemed of primary importance. Paragraph 20 of our Despatch No. 65 (Financial), of March 15th, shows clearly how our outlay is due to these orders, and how effectively we have carried out the latter to the comparative starvation of internal lines. We have adhered to the same policy in framing the Budget of the current year.

- (b) Next, the 6th and 12th paragraphs of the despatch under reply seem to be written under the impression that Lord Randolph Churchill disapproved of the provision for the current year 1887-88, proposed in our Forecast of September 22nd, 1885. Lord Randolph Churchill, however, in his Despatch No. 367 (Financial), of 10th December 1885, merely reserved his opinion as to future years, but sanctioned for 1886-87 a sum exceeding by above a crore of rupees the normal 350 lakhs limit of borrowed money, on the ground of "the importance of rapidly completing the works already begun, specially those for the protection of the country against the risks of war and famine." These reasons are just as strong for this year as for last, and as our Budget (exclusive of the Mandalay Railway, to which allusion will be made presently) took merely the Forecast figure, started no fresh works, and moreover did not exceed the normal limit of loan expenditure, together with the 50 lakhs for protective railways hitherto supplied from the Famine Insurance grant, we saw no reason to expect any objection to it. That the 50 lakhs of the grant should be borrowed under the name of the Railways instead of under that of Burma was a mere matter of account governed by considerations of policy. Finally, as all the borrowed money for the defences was comprised in the total fixed limit

of 350 lakhs, and had been provided at the expense of the Railways, it appears reasonable that if the full outlay on the former could not be worked up to, the amount of the deficiency might be restored to the Railway portion of the grant.

- (c) As regards the Mandalay Railway the present despatch goes back to a wish expressed by Lord Kimberley in July 1886, which has been superseded by subsequent communications. In reply to Lord Kimberley's wish, we stated that we did not think it would be

*Telegram from Secretary of State, dated 27th October 1886.*

"Your Railway Despatch No 148, dated 20th September last. Construction Mandalay Railway sanctioned as State Railway. Question of mode of providing funds deferred till later; the £20,00,000 required till end of the financial year being met from your balances. A despatch on the subject will follow."

*Extract, paragraph 5, of Despatch from Secretary of State, No. 96E., dated 25th November 1886*

"It will be necessary, therefore, for you to consider, without reference to the prospects of the Nagpore-Bengal Railway scheme, what sums you will be justified in borrowing for the construction of Mandalay Railway, and how those sums should be provided, bearing in mind the fact that these railways have been expressly sanctioned as a work of great Military and Political importance, which should not be allowed to interfere with the normal construction of Public Works in other parts of India."

*Telegram to Secretary of State, dated 21st January 1887.*

"Your Railway Despatch No. 96, dated 25th November last. We are of opinion that it is impossible to provide for disbursements on account of Burma Railway, Tounghoo extension towards Mandalay, during next official year, in view of great Military and Political importance without interfering with the normal construction Public Works elsewhere. If you cannot grant Bengal-Nagpore refund or otherwise cannot assist, we cannot manage except by borrowing in India or in England."

"desirable, in the interests of economy, to stop the construction either of the Famine lines in active progress or of the Frontier lines now rapidly approaching completion;" and we suggested that the Nagpore-Bengal refund would supply all the necessary funds. What followed will be best learned by perusal of the extracts given in the margin. When orders were received to commence the Mandalay Railway, it was clearly said that it was not to be "*allowed to interfere with normal construction of Public Works in other parts of India.*" To provide a crore of rupees out of the normal grant, with-

out interfering with the "normal construction" in full progress in other parts of India, was impossible. In our reply of the 21st January, quoted marginally, it was pointed out that either the Nagpore-Bengal refund or special borrowing would be necessary. No reply to this telegram having been received, we presumed that the course we had suggested had approved itself to Your Lordship. No objection, moreover, was taken to our appropriation Despatch of 18th April until four months later, the 18th August.

4. The next point brought forward in paragraph 7, and again touched upon

SANCTIONED MILEAGE.					OPEN MILEAGE.				
On March 1st, 1884.	On March 31st, 1887.	INCREASE.			On March 31st, 1884.	On March 31st, 1887.	INCREASE.		
		Military.	Other.	Total.			Military.	Other.	Total.
14,290	16,596	852	1,454	2,306	10,832½	13,390	275	2,283	2,558

in paragraph 14, is that the progress made in railway construction is very satisfactory. In the figures adduced to support this the Manda-

lay Railway is inserted among railways other than those for Military defence, although, in the Despatches of 25th November above quoted, it is said that

this railway has been "expressly sanctioned as a work of great Military and Political importance." The necessary correction has been made in the table given in the margin.

Without discussing the point whether an annual average of 800 miles of additional open mileage can be considered sufficient to meet the growing wants of the country, there can be no doubt that a time when our recognised indispensable lines, both Military and Famine protective, are unfinished, is not appropriate for suddenly slackening off the speed of their construction.

5. As another argument to justify reduction of outlay, the Despatch next adduces, in paragraph 8, statistics showing that the average of the past four years largely exceeds that of the five years 1874-75 to 1878-79. This is naturally accounted for by the fact that in the former period neither had the necessity for Famine protection been enforced by the Famine Commission, nor had that for Military defence developed through the advance of Russia and the conquest of Upper Burma. Between the two periods no fair comparison can lie. But the Statement B appended to the Despatch of which no use is made

	1874-75. to 1878-79.	1879-80. to 1883-84.	1884-85. to 1887-88.
	₹	₹	₹
Average outlay . . .	46,42,333	52,13,636	92,12,182
„ annual net charge .	13,07,813	9,02,173	12,01,497

neutralises the argument, and removes any cause for uneasiness, since it shows that the annual burden now of the larger sum is less

by ₹106,316 than was that of the smaller sum in the earlier period. In fact we might have raised over three crores of rupees more, and completed the Madras Famine lines, and yet have had no heavier burden to bear than we had some nine years ago. Moreover, even this contrast hardly does justice to our present position, because we have curtailed our Irrigation Capital outlay from Revenue in order to meet the interest of certain railways which is included in the above net charge, and also have now an exceptionally great length of line under construction which weighs down our net receipts. Again, the net charge shown for the third period includes interest on large portions of the sums paid into the Secretary of State's Treasury by certain Railway Companies, which were used for Imperial purposes until wanted for railway construction. Finally, this net charge includes the annuity for the extinction of the debt to the shareholders of the East Indian Railway Company, an item which cannot be fairly taken into account. The real remunerativeness of our railways has been brought out in paragraph 25 of our Despatch No. 65T. of 15th March last: a document full of facts bearing on the present question generally, to which it may not be inappropriate to invite the fullest consideration.

6. In that despatch it was clearly shown—

- (1) That the new burden of frontier and coast defences had been thrown upon the normal grant of loan funds, fixed originally for Railways and Irrigation only (paragraph 19).
- (2) That, notwithstanding this, the whole outlay on the three objects combined had, in the five years ending with 1886-87, only exceeded by 155½ lakhs the normal amount sanctioned after reference to two Parliamentary Committees (paragraph 20).
- (3) That nearly one-half of this excess (68½ lakhs) had been provided by the "Mysore refund," that is, without any addition at all to debt (paragraph 20).
- (4) That this excess was due solely to the war anticipations of 1885, and

to the consequent pushing on of works under direct orders from England (paragraph 20).

- (5) That in order to carry out those orders, Frontier Railways outlay had been raised during the five years from 6½ to 327¼ lakhs, while that on other railways under construction had been cut down from 227½ to 101½ lakhs, and on open lines from 109½ to 64½ lakhs, the latter figures being for 1886-87 (paragraph 20).
- (6) That if a fair allowance be made for the exigency of Frontier defence, the amount actually borrowed for Public Works compares favourably with the average annual borrowings in earlier years as far back as 1859-60 (paragraphs 22 and 23).
- (7) That the Railways, as a whole, are not a progressive loss to the State, and that the open State lines earn 5.39 per cent., including exchange and indirect charges (paragraph 25).

"I feel convinced that, without interfering with the progress of what may be essential for Military and Political purposes, or stopping works actually in hand, your Government will be able to curtail to the necessary extent the outlay proposed on other works, additions to, or improvements of, the open lines, on stores or on irrigation, or by postponements of works to a future year."

ways or even stopping works in hand.

8. To show how impossible it is to make the reduction under such conditions, it is necessary to review in detail the various allotments as they stood at the date of receipt of Your Lordship's telegram. In the first place it may be remarked that the analysis of our Budget presented in the first paragraph of the despatch contains errors of classification, which amount to about £3,230,000 (RX), and of course very materially affect the relative proportions of different heads to each other; and it is moreover irrespective of the distribution of the lump sum we had reserved to meet English outlay.

The Table A appended classifies the grants as they stand at present under the

	Under construction.	Open.	TOTAL.
	₹	₹	₹
Military Railways, including Reserve	2,50,66,350	13,26,280	2,63,92,630
Non-Military, including Reserve	78, 92, 820	48,18,640	1,27,11,460
Railway Stores and Reserve	...	...	8,07,910
Irrigation	70,00,000	...	70,00,000
Exchange (a)	...	...	30,30,000
	3,99,59,170	61,44,920	4,99,42,000

(a) The 30,30,000 under exchange is an assumed figure entered so as to make the total agree for purposes of comparison with the total detailed in paragraph 2 of the Despatch—70 lakhs for Irrigation. This will doubtless be under the actual figure, but the difference will be far more than compensated by the inevitable lapses from which source alone we were able, in our telegram of the 8th instant, to indicate any hope of saving.

despatch. Table B attached shows the allotments made under the head "Irrigation."

It will be seen that no new Irrigation work is contemplated except the Perryar project, for which only 1½ lakhs have been allotted; that no new railways have been commenced, and that the grants for Non-Military Railways under construction are absorbed by four projects, which are all far advanced

two heads, Military and Non-Military, and shows further the sums allotted for open lines. From it the statement in the margin has been framed to correspond with the total of the amount (429 × 70) quoted in the 3rd paragraph, and with the classification given in the 4th paragraph of the despatch.

	₹
Open Non-Military Railways	48,18,640
Railway Stores	8,07,910
	<u>56,26,550.</u>

towards completion. Thus, leaving out of consideration the Military lines with the construction of which Your Lordship desires no interference, and works actually in hand, the balance remaining amounts only to 56½ lakhs. In this no reduction was feasible, especially when five months of the year had elapsed.

The inevitable conclusion is the one which was telegraphed to Your Lordship on the 9th September, that the only reduction which can now be counted upon is that accruing from the usual lapses, which will amount to 10 or 15 lakhs, and possibly more. Table C gives the lapses that have occurred during the past 5 years under "Irrigation."

9. The instruction to reduce the total outlay on Railways and Irrigation to four crores, including exchange, is in paragraph 14 applied specifically to the current year only; we are uncertain whether it is intended, as may possibly be inferred from the general tenour of this portion of Your Lordship's despatch, to fix the limit for the coming year also at this figure; but, considering that an early understanding as to the funds which will be available materially facilitates the conduct of operations, we deem it desirable to at once address Your Lordship on the subject.

It may be observed that the limit of four crores would place us in this position, compared with 1884-85,—when we had for Railway and Irrigation alone 350 lakhs of Loan funds and 50 lakhs from the Famine Insurance grant, total four crores,—that we should be worse off by 40 or 50 lakhs, because exchange was then excluded from the total, but now is to be included in it. On the other hand, this imposition of the exchange may be roughly considered as tantamount to that of the Frontier and Coast Defences, which came upon the Railway and Irrigation grants in 1885-86, but which it is now understood, from paragraph 18 of the despatch under reply, are to be regarded in future as outside the grant for Railways and Irrigation—a much simpler and better arrangement. The Railway and Irrigation grants would therefore be in practically the same position as our proposals of 22nd September 1885, No. 264 (Financial), assigned to them. It will be observed that the 25 lakhs formerly given from the Famine Insurance grant to Irrigation are left out of account, and this is because we have assigned away that item to meet the guarantee of the Indian Midland and Bengal-Nagpore Railways (see paragraph 8 of our No. 264 above quoted, and paragraph 16 of Lord R. Churchill's reply, No. 367F., of 10th December 1887).

10. In order to ascertain whether this proposed limit of four crores is suitable, with reference to our present position, we detail for Your Lordship's information the work that is now in hand or remains in prospect, classifying in groups to correspond with those in paragraph 6 of the Despatch No. 264, but including exchange.

#### RAILWAYS IN PROGRESS.

##### Group A—Protective Lines.

	Outlay to end of 1887-88. ₹	Balance required to complete. ₹
Bellary-Kistna . . . . .	1,61,95,081	26,04,969
Cuddapah-Nellore . . . . .	58,02,455	2,85,368
Assam-Bihar . . . . .	1,26,59,319	35,52,794
Bilaspur Katni Umeria Colliery . . . . .	7,99,414	2,00,586
<b>TOTAL OF GROUP A—PROTECTIVE LINES</b>		
<b>IN PROGRESS . . . . .</b>	<b>3,54,56,219</b>	<b>66,43,717</b>

*Group C—Lines under agreement.*

	R	R
Bewzara to Nizam's Frontier . . .	14,04,000	2,76,859

*Group D—Frontier Lines.*

Sind-Pishin . . . . .	5,18,07,750	5,247
Bolan . . . . .	28,02,529	2,42,751
Sind-Sagar . . . . .	2,32,76,509	42,35,488
Sutlej Bridge, Ferozepore . . .	55,25,363	84,970
Frontier Reserve Locomotives, &c. . .	12,82,000	8,28,000
Kandahar Reserve . . . . .	38,97,562	1,56,016
Mandalay Railway . . . . .	1,33,58,819	1,16,41,181
	<u>10,19,50,532</u>	<u>1,71,93,653</u>

## RAILWAYS NOT COMMENCED.

*Group B—Protective Lines.*

	Balance require to complete.
	R
Bellary-Kistna—Hindupur Extension . . .	75,25,000
Cuddapah-Nellore—Dharmavaram . . .	1,08,54,000
Ditto, Vilupuram . . . . .	87,68,127
Panchpara-Pooree Railway . . . . .	2,31,00,000
Assam-Bihar—Kaunia-Dhubri Extension . . .	70,00,000
Madras Minor Lines . . . . .	98,00,000
	<u>6,69,83,127</u>

*Group C—Lines under agreement.*

	R
Warora to Nizam's Frontier . . . . .	38,00,000

*Group E—Frontier Lines.*

Bolan Railway—making Upper Section permanent	32,08,178
Amran Extension <i>via</i> Khojak 1 in 40 gradient . . .	1,01,82,670
Ditto ditto temporary lines . . . . .	6,09,380
Chenab Bridge, Ramuwalla . . . . .	50,43,624
North-Western Railway—Jhelum-Peshawar gradients improvement . . . . .	43,08,237 (a)
Peshawar to mouth of Khyber . . . . .	12,00,000
TOTAL . . . . .	<u>2,45,52,089</u>

(a) This item is still under scrutiny, with a view to reduction, if possible.

11. As a test of how far a grant of four crores would meet our needs, we abstract from the above the items which seem to us most urgent, either in order to wind up great works in hand, or to meet now recognised necessities, and frame a sketch estimate for 1888-89. It is assumed that the improvement of the North-Western Railway gradients will be spread over several years, as contemplated in our Despatch No. 37R. of March 1st, 1887, and that the extension from Peshawar will not be made till actually required. It is also assumed that the Bellary-Kistna and Cuddapah-Nellore Railway extensions may eventually be provided for through the Southern Mahratta and South Indian Companies, in pursuance of the communication referred to in

the 17th paragraph of the despatch under reply, and the other protective lines must stand over. The sketch is as follows—

*Railways—*

		R
Group A—Bellary-Kistna	} to complete . . .	26,04,000
Cuddapah-Nellore		2,85,000
Assam-Bihar		35,53,000
Bilaspur-Katni Colliery . . . . .		2,00,000
Group C—Bezwada to Nizam's Frontier, to complete . . .		2,77,000
Group D—Sind-Pishin	} to complete . . .	5,000
Bolan		2,43,000
Frontier Reserved Locomotive		8,28,000
Sutlej Bridge		85,000
Kandahar Reserve		1,56,000
Sind-Sagar, probably to complete . . . . .		32,35,000
Mandalay Railway . . . . .		80,00,000
Group E—Bolan—Upper Section, permanent . . . . .		20,00,000
Amran Extension . . . . .		52,25,000
Ditto temporary lines . . . . .		6,09,000
Chenab Bridge . . . . .		20,00,000
North-Western Railway gradients . . . . .		20,00,000
Group G—Open Line Capital and Stores . . . . .		80,00,000
TOTAL RAILWAYS . . . . .		3,83,05,000

*Irrigation—*

Net outlay, excluding lapses . . . . .	60,00,000
	4,43,05,000

The above Forecast, which includes exchange, has been made with as much care and provision as is possible, and after due consultation of all sources available. As to group A, we trust that it will be admitted that the wisest course, from a purely financial point of view, is to carry on as rapidly as possible works which are so near completion. The outlay of 61 lakhs will finish systems on which 298½ lakhs will already have been spent. Regarding Group G, it has to be remembered that in 1888-89 we shall have to provide for the addition to the open line railway account of the Sind-Pishin, Sind-Sagar, Mandalay (in part), and Oudh and Rohilkhand (for three months). The result is that we might manage, if allowed the four crores exclusive of exchange, as we were previous to the war preparations of 1885-86, but cannot do so otherwise, consistently with what must be deemed a very moderate prosecution of the very important Military projects in Group E.

12. We are, of course, aware that this assignment will probably turn out, after allowing for the usual lapses, to be some 70 or 80 lakhs in excess of a limit of 350 lakhs, and that the whole amount will have to be actually raised by the State in the open market, unless it can be to any extent obtained from other sources. We trust, however, that we may infer from Your Lordship's Despatch, No. 97R. of the 8th ultimo, that the negotiations which Your Lordship has recently entered into with the Southern Mahratta and South Indian Companies for the transfer of the Bellary-Kistna and Cuddapah-Nellore Railways will shortly be brought to a successful termination, in which case refunds, amounting to about  $2\frac{1}{2}$  crores of rupees, would accrue. The effect of the transfer would also be to relieve next year's grant of the R28,89,000 above provided for these lines. A large refund might also be obtained by the transfer of the Assam-Bihar Railway to the Bengal and North-Western Railway Company, as already suggested in our Despatch No. 47 (Financial) of 22nd February last, if the correspondence with Your Lordship, which the Company are understood to have commenced, should lead to the conclusion of suitable terms.

13. In the 13th paragraph of the despatch Your Lordship remarks that, in future, whatever sum may be recognised as the limit of borrowing, it shall be considered to include exchange. We feel some doubts as to how it is intended to bring this principle into practical application. When once the grants are distributed for the year, it would be next to impossible to subject them to constant variation, so as to meet the fluctuations of exchange in the course of the year; but we do not know whether any adjustment of this kind is proposed. Moreover, the difficulty in estimating accurately beforehand the amount that would be required for any one year's expenditure in England necessitates our making a full provision, in which there is always a lapse at the end of the year; under the proposed system the lapse would necessarily be greater than at present by about 40 per cent.

We think, on the whole, it would be advisable to work the grants on the present system. It will be remembered that the cost of exchange is to a considerable extent met by the lapses which inevitably occur.

14. In connection with Your Lordship's observations on the subject of inducing capitalists to invest in railway undertakings without a Government guarantee, we would urge that measures be taken to place before the public the remunerative character of our railways as evidenced by the facts brought to Your Lordship's notice in our Despatch No. 65 of 15th March last, and that the terms designated as the "Bengal and North-Western," which are those on which alone we are at present able to make railway concessions, should be notified, so as to become generally known to promoters.

On the other hand, care will be necessary not to encourage enterprises merely because no guarantee is asked, without considering whether they are likely to be remunerative and not to involve risk of future pressure on the State for their acquisition, or whether they are really required by the districts affected, in addition to existing facilities, and will not wantonly endanger the revenues of existing lines guaranteed by the State.

15. We would enquire in conclusion whether Your Lordship's remarks in paragraph 16 are to be understood as modifying in any way the existing orders that the metre gauge is to be the minimum gauge recognised by the State, and in connection with this subject we trust it may not be overlooked that our experience of "Light Railways" on a smaller gauge, such as the Morvi Railway, has not so far been encouraging.



Enclosure No. 1 of Public Works Despatch No. 57 of 1887.

*A.—Abstract showing existing grants for State Railways (Indian and English combined, but excluding exchange).*

Railways.	MILITARY.		NON-MILITARY.		TOTAL.
	Under construction.	Open.	Under construction.	Open.	
	₹	₹	₹	₹	₹
Toungghoo-Mandalay Extension . . . . .	1,00,61,010	...	...	...	...
Sind-Pishin, Sibi-Quetta Section . . . . .	38,49,710	...	...	...	...
Do., Darwaza-Quetta Section . . . . .	3,87,000	...	...	...	...
Do., Bostan-Gulistan Section . . . . .	8,44,000	...	...	...	...
Do., Killa-Abdulla Branch . . . . .	1,84,000	...	...	...	...
Sind-Sagar, Western Section . . . . .	37,25,400	...	...	...	...
Do., Eastern Section . . . . .	3,00,000	...	...	...	...
Ferozepore Bridge . . . . .	10,00,000	...	...	...	...
Bolan . . . . .	2,81,000	...	...	...	...
Kandahar Reserve Materials . . . . .	6,38,230	...	...	...	...
North-Western . . . . .	...	13,26,280	...	...	...
Do., Frontier Lines Rolling-stock . . . . .	6,50,000	...	...	...	...
Do., Punjab Northern gradient improvements . . . . .	6,96,000	...	...	...	...
Assam-Bihar, Tirhoot Section . . . . .	...	...	7,50,000	...	...
Do., Assam-Bihar Section . . . . .	...	...	15,71,470	...	...
Cuddapah-Nellore . . . . .	...	...	5,08,770	...	...
Bellary-Kistna . . . . .	...	...	38,03,580	...	...
Bezwada to Hyderabad Frontier . . . . .	...	...	12,28,000	...	...
Pakal-Villupuram Survey . . . . .	...	...	14,850	...	...
Hindupur Extension Survey . . . . .	...	...	1,000	...	...
Dharmavaram Extension Survey . . . . .	...	...	17,150	...	...
East Indian . . . . .	...	...	...	10,50,000	...
Rajputana-Malwa . . . . .	...	...	...	7,60,000	...
Wardha Coal . . . . .	...	...	...	-1,05,000	...
Katni-Umeria Section, B. E. S. Railway . . . . .	...	...	...	1,24,400	...
Umeria Colliery . . . . .	...	...	...	2,00,000	...
Burma . . . . .	...	...	...	1,40,720	...

*A.—Abstract showing existing grants for State Railways (Indian and English combined, but excluding exchange)—contd.*

Railways.	MILITARY.		NON-MILITARY.		TOTAL.
	Under construction.	Open.	Under construction.	Open.	
	R	R	R	R	R
Eastern Bengal . . .	...	...	...	17,63,530	...
Northern Bengal . . .	...	...	...	2,19,450	...
Tirhoot . . . . .	...	...	...	3,38,540	...
Patna-Gya . . . . .	...	...	...	1,00,000	...
Nalhati . . . . .	...	...	...	—3,000	...
Dacca . . . . .	...	...	...	45,000	...
Cawnpore-Achnera . . .	...	...	...	50,000	...
Bareilly-Philibhit . . .	...	...	...	20,000	...
Bewari-Ferozepur . . .	...	...	...	75,000	...
Dhond and Manmad . . .	...	...	...	40,000	...
<b>TOTAL</b> .	<b>2,35,66,350</b>	<b>13,26,280</b>	<b>78,92,820</b>	<b>48,18,640</b>	<b>3,76,04,090</b>
Stores for the Reserve . .	...	...	...	...	17,770
Saving in provision for expenditure in England on incidents thrown forward from 1885-86 to 1886-87 . . .	...	...	...	...	8,45,840
Variation in store balances .	...	...	...	...	—2,97,000
Reserve for Military Lines .	15,00,000	...	...	...	15,00,000
Do. ordinary do. .	...	...	...	...	2,41,300
<b>GRAND TOTAL</b> .	<b>2,50,66,350</b>	<b>13,26,280</b>	<b>78,92,820</b>	<b>48,18,640</b>	<b>3,89,12,000</b>

Enclosure No. 2 of Public Works Despatch No. 57 of 1887.  
*B.—List of Irrigation Productive Public Works.*

NAME OF WORK.	Sanctioned Estimate.	CAPITAL OUTLAY.				Total to end of 1887-88.	Balance remaining to be spent.	REMARKS.
		Actuals to end of 1886-86.	Revised Estimate, 1886-87.	Budget Estimate, 1887-88 (modified to date).				
1	2	3	4	5	6	7	8	
<i>Beluchistan.</i>	R	R	R	R	R	R	R	
Khusul Khan reservoir . . . . .	6,23,400	...	70,000	3,00,000	3,70,000	2,53,400		
<i>Bengal.</i>								
Orissa canals . . . . .	3,11,02,131	2,20,78,027	5,48,000	6,50,000	2,32,71,027	78,31,104		
Madnapore canal . . . . .	1,82,49,000	82,67,106	12,000	12,000	82,81,106	...		
Tidal canal . . . . .	17,72,699	17,96,469	...	...	17,96,469	20,72,349		
Sone canals . . . . .	2,78,98,697	2,48,61,848	1,90,000	1,66,000	2,62,16,348	1,05,08,463		Completed.
TOTAL . . . . .	6,90,12,527	5,69,86,969	7,50,000	8,27,000	5,86,03,969			
<i>North-Western Provinces and Oudh.</i>								
Ganges canal . . . . .	2,92,34,433	2,64,32,943	1,24,000	1,63,100	2,67,19,943	26,14,480		
Lower Ganges canal . . . . .	(a) 3,22,91,529	2,69,30,568	16,77,150	20,94,800	3,01,02,518	21,89,011		
Acra canal . . . . .	87,16,697	82,41,864	89,300	53,200	83,79,864	3,36,843		
Eastern Jumna canal . . . . .	34,41,909	28,18,018	61,060	38,900	30,07,968	4,33,941		
TOTAL . . . . .	7,36,84,568	6,39,22,783	19,37,500	23,50,000	6,82,10,283	54,74,275		(a) Inclusive of Rs. 45,67,019, estimated expenditure of the Kalinadi aqueduct provisionally sanctioned by the Government of India.
<i>Punjab.</i>								
Bari Doab canal . . . . .	1,67,98,600	1,54,44,276	63,341	90,000	1,55,97,517	2,01,083		
Western Jumna canal . . . . .	1,07,90,504	98,09,178	2,61,263	4,20,000	1,04,90,446	3,10,058		
Sirhind canal (State outlay) . . . . .	2,23,64,400	708,15,098	9,77,301	7,40,000	2,20,32,399	2,32,001		

These works are constructed by the respective Local Governments, on the financial responsibility of the respective Local Governments.

Lower Sohar and Para canal Siddhai canal Chenab canal	7,23,104 7,48,727 28,56,689	3,97,414 6,40,686 13,44,980	1,85,042 1,88,948 8,69,716	70,000 1,02,000 6,30,000	6,00,456 7,81,384 23,44,566	1,27,648 ... 5,90,983	(c) Represents actual expenditure.
TOTAL	5,89,66,924	4,78,61,382	(c) 19,83,316	20,62,000	5,18,38,698	14,01,883	
<i>Madras.</i>							
Godavari delta system	1,10,88,695	1,03,10,954	2,35,419	2,89,570	1,07,11,413	2,93,752	
Kistna "	1,38,99,764	70,11,380	4,30,174	5,77,000	80,71,554	58,28,230	
Cauvery "	10,69,305	1,51,648	1,13,642	10,000	16,04,110	...	
Pennar ancient "	16,12,789	14,13,744	63,925	45,000	1,00,000	53,490	
Srivatikunthan ancient system	13,61,520	15,12,721	16,811	17,430	1,10,000	14,558	
Sangam ancient system	28,96,487	21,59,241	9,47,000	61,000	2,10,000	30,196	
Kurnool canal	No estimate	2,16,70,369	...	...	2,10,000	82,780	
Burur tank canal	4,00,000	2,34,123	64,117	80,000	1,10,000	...	
Parlyar project	61,85,000	...	...	1,50,000	1,10,000	60,55,000	
TOTAL	3,91,03,530	4,60,16,634	12,87,088	11,30,000	4,84,38,722	1,23,97,886	
<i>Bombay.</i>							
Hathmati canal	4,94,705	4,90,015	...	...	4,90,695	...	Completed.
Further outlay on these works will be met from or by the Government	4,44,486	1,15,025	4,380	10,000	4,29,409	15,077	
Lower Panjhra river works	6,91,891	6,00,704	16,460	10,100	6,46,314	45,517	
Each canal	8,75,189	3,16,199	620	1,220	3,48,383	26,860	
dry funds.	60,63,285	78,00,100	82,020	61,000	69,73,120	80,115	Completed.
Elkruk tank	12,23,243	1,00,117	...	...	12,88,117	...	
Krishna canal	17,47,545	7,56,575	9,400	...	7,90,375	9,57,170	
Begari canal	16,28,852	16,01,015	20,470	...	16,21,382	7,470	
Eastern Nara project	62,70,698	46,10,228	1,76,700	1,84,500	48,92,188	2,84,668	
Desert canal	12,66,889	10,00,217	43,920	88,700	12,17,887	49,003	
Unharwah project	3,45,427	2,10,110	28,230	9,800	3,33,620	11,907	
TOTAL	1,95,53,108	1,74,20,986	3,45,190	3,65,320	1,81,31,496	14,77,706	
GRAND TOTAL	25,52,43,066	23,21,98,754	63,23,004	70,24,320	24,55,46,108	(d) 3,15,06,712	(e) Of this Rs.1,07,589 is to be met from ordinary funds.

\* Deduct 82,320

60,42,000

In Reserve

55,000, of which Rs.48,000 have been promised to the Punjab for the Siddhai canal.

70,00,000



No. 235 (Financial), dated 8th September 1887.

From—The Secretary of State for India,  
To—The Government of India.

In Your Excellency's letter dated the 15th of March, No. 65, you reply to  
Reply to Financial Review certain observations made by the Earl of Kimberley,  
in 1886: Public Works Ex- when reviewing the Financial Statement of 1886.  
penditure.

2. It is unnecessary for me to discuss the arguments which it contains in detail. They are valid as a defence of an outlay on objects of public utility at a time when there is a surplus of revenue available, but they do not affect Lord Kimberley's contention that, when the pressure on your finances renders economy essential, it is incumbent on all the Local Administrations to restrict such expenditure within the narrowest limits consistent with efficiency. And, considering the financial position of the present year to be even less satisfactory than in 1886, I desire that every effort may be made to prevent avoidable outlay in the Public Works Department.

3. Paragraphs 17 and 18 of Your Excellency's letter refer to the subject of the arrangements with the Provincial Governments which have been dealt with in your Financial Statement for the year.

4. The remaining portion of the letter contains many interesting observations regarding the outlay in the construction of public works from borrowed money, on which it is needless for me to make any comments, as in another Despatch (No. 216, dated 18th August 1887) I have addressed your Government on the subject at some length.

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## SECTION II.

### Protective Railways.

1. General correspondence relating to the Bengal-Nagpur, Bhopal-Gwalior and Jhansi-Manikpur projects.
2. Indian Midland Railway.
3. Bengal-Nagpur Railway.
4. Madras Railway.
5. Assam-Bihar Railway.
6. Benares-Puri Railway.





PROTECTIVE RAILWAYS.

1.—General Correspondence relating to the Nagpore-Bengal, Bhopal-Gwalior, and Jhansi-Manickpur Projects.

Telegram No. 33 R. A., dated 16th February 1885.

From—Viceroy, Calcutta,

To—Secretary of State for India, London.

In preparing forecast in reply to your Railway Despatch No. 148, we have necessarily omitted provision for further outlay on Bengal-Nagpore and Bhopal Railways, including Jhansi-Manickpur. Unless companies are launched and make payments by 31st March 1885, or Your Lordship can make temporary advances from the Home Treasury pending launching, work must stop absolutely on that date, which we should regret, as lines are much needed.

A despatch on the subject will follow to-morrow.

No. 27 (Railway), dated 17th February 1885.

From—The Government of India,

To—The Secretary of State for India.

We have the honour to bring to Your Lordship's notice that we are now provisionally carrying on the construction of the following railways, which we gather from the communications we have received from Her Majesty's Government it is intended to make over to companies as soon as the negotiations now in progress are completed:—

Nagpore-Bengal Railway.

Bhopal Railway System—Cawnpore-Jhansi Section.

„ „ „ Jhansi-Manickpur Section.

2. In preparing a forecast of railway construction in accordance with Your Lordship's Despatch No. 148 Ry., dated 27th November 1884, which will shortly be sent forward for approval, we have been obliged to omit any provision for outlay on these lines, and indeed have been forced to anticipate that the outlay incurred thereon up to 31st March 1885 will be refunded, and become available for outlay on State railways.

We should be sorry to see work on these railways brought to a stand-still, as we consider that they are much needed; but unless the Companies are launched and make payments into the Home Treasury, or unless Your Lordship should be in a position to make temporary advances from the Home Treasury, and think proper to do so in view of the companies being launched at an early date, we cannot see how the stoppage of construction can be avoided.

3. We estimate that on the 31st March next the outlay incurred on these railways will have been somewhat as follows:—

	Lakhs.
Nagpore-Bengal Railway . . . . .	20
Bhopal Railway System—Cawnpore-Jhansi Section . . . . .	20
„ „ „ Jhansi-Manickpur Section . . . . .	34

We may add that it is anticipated that about the undernoted amounts can be

expended with advantage in 1885-86; this includes outlay on indents sent to Your Lordship for materials which have not yet been complied with :—

	Lakhs.
Nagpore-Bengal Railway . . . . .	130
Bhopal Railway System—Cawnpore-Jhansi Section . . . . .	67
„ „ „ Jhansi-Manickpur Section . . . . .	70

4. It is scarcely necessary to say that a stoppage of work on these railways, or indeed any order to curtail outlay, would lead to considerable immediate loss, and would further enhance the ultimate cost of the projects; but we can see no other course open, unless we receive definite instructions from Your Lordship on the matter, which will allow of the work proceeding. We would ask that we may be favoured with instructions by telegraph as soon as possible after the receipt of this letter by Your Lordship.

Telegram, dated 6th March 1885.

From—Secretary of State for India, London,  
To—Viceroy, Calcutta.

Your telegram of 16th February 1885. Cannot make advances here for these railways. Prospect of companies raising capital next year too vague for inclusion of repayment of past outlay in estimates.

Telegram, dated 10th March 1885.

From—Viceroy, Calcutta,  
To—Secretary of State for India, London.

Your telegram of 6th march 1885—Advances to companies' railways. Our forecast including repayment 70 lakhs advances sent by the mail of 3rd March 1885. Despatch urges extreme importance of coming to arrangement with both companies on terms recommended in our Railway Despatch No. 191 of 9th December 1885. Difficulty of now reducing 70 lakhs outlay on works in hand extreme and loss considerable unless position reconsidered. Pending final orders on our Railway Despatch of 3rd March 1885, we propose to leave estimates undisturbed according to forecast.

Telegram, dated 13th March 1885.

From—Secretary of State for India, London,  
To—Viceroy, Calcutta.

Your telegram of 16th March 1885, also your Railway Despatch No. 27. Present financial position prevents companies being launched; regret stoppage of operations, but supply of funds cannot be expected. Estimates should be revised accordingly.

No. 27 (Railway), dated 12th March 1885.

From—The Secretary of State for India,  
To—The Government of India.

Your predecessor's telegram of 5th December last informed me of the preference entertained by your Government for the terms proposed by the promoters of the Bhopal-Gwalior-Cawnpore Railway in place of the Southern Mahratta terms, in negotiating for the construction by private companies of the Bhopal-Gwalior, Nagpore-Bengal, and Bilaspur-Etawah Railways.

2. The reasons for this preference have been fully explained in the Railway letter from your Government of 9th December 1884, No. 191. Briefly stated, they are that, unless the net earnings fall below 2 per cent. on capital outlay, the so-called Bhopal terms are pecuniarily more favourable to the State than the Southern Mahratta terms; and that the former are free from the disadvantages attendant on the latter in regard to the issue of debentures, namely, that the interest on debentures not being a charge on working expenses, the shareholders, who are entitled to a fixed portion of net receipts, have no interest either in the rate at which debentures may be raised or in the economical expenditure of capital so procured.

3. The fact that, under the "Southern Mahratta terms," the Government would receive a less share of the net earnings than under the proposed "Bhopal terms," was not overlooked in the discussions which took place when the matter was under consideration; but it appeared to me that advantages in other directions would be obtained under the conditions of the Southern Mahratta contract, which more than counterbalanced any possible direct gain from this source.

4. Under the latter form of agreement the proprietorship of the undertaking is from the first vested in the Government, the company becoming merely the agents for the provision of the funds, and for the construction, maintenance, and working of the line. But at the same time the company by sharing in the net earnings, whatever be their amount, have from the first a direct interest in the economical construction of the railway, as well as in its subsequent working; and this is equally the case whether the sanguine anticipations of the promoters should be realised, or whether the receipts should be little more than sufficient to cover the working expenses. Moreover, to whatever extent the company may be able to improve their own share of the net earnings, they must thereby increase the Government receipts in a threefold degree.

5. Under the 'Bhopal' terms, the company from the outset would be guaranteed a higher rate of interest than that of other securities of the Government of India, and, indeed, a rate as high as that likely to be secured only by economical management on the other plan. And, although it is perfectly true, as Your Excellency points out, that the share of the receipts which the Government will take may probably be less under the "Southern Mahratta" than under the "Bhopal" terms, this is not, in my opinion, an absolutely conclusive reason for adopting the latter terms, where the object in view is to encourage the prosecution of railway construction; and it appears to me that, on the whole, the true interests of the public, in obtaining an economically constructed and efficiently worked railway, together with the full advantage of employing private enterprise in the undertaking, are more likely to be promoted by the conditions which have been conceded by me on the basis of the "Southern Mahratta" terms, than by those for which you express a preference.

6. It is important to remember that, if a rate of interest which will be regarded by investors as sufficient, irrespective of any share of profits, be granted in the case of an undertaking whose prospects are believed to be unusually good, it would be difficult to refuse it to a company formed to construct a line less likely to prove remunerative, and hence such a concession at the outset might virtually lead to the adoption of a system of guarantee, under which, in the case of an unpromising line, the shareholders would have little or no incentive to render the line a profitable work, as was the case with some of the Guaranteed Companies.

7. The point referred to by your Government as to the possible absence of motive on the part of the company to keep down the rate of interest at which their debentures are raised, if that interest does not form a portion of the working expenses, no doubt requires consideration, and it has not been overlooked. It is certainly important that the proportion of the capital to be raised by debentures should not become excessive, but I am not sure, from your remarks, whether you fully bear in mind the extent to which the company is interested in finding the money at a

cheap rate. To illustrate this, I will assume that the total capital is 5,000,000*l.*, of which it has been agreed that 3,000,000*l.* is to be raised by the issue of shares and 2,000,000*l.* by debentures, and that the net earnings of the line are 200,000*l.*, or 4 per cent. on the whole capital. Even if the debentures were raised at a rate lower than  $3\frac{1}{2}$  per cent., the company would be entitled to receive  $3\frac{1}{2}$  per cent. upon 5,000,000*l.*, and one fourth of 200,000*l.*, or altogether 225,000*l.*; but it is obvious that the profits of the company will be greater if out of this sum they have to pay their debenture-holders only at the rate of  $3\frac{1}{2}$  per cent., or 65,000*l.*, than if they must give them  $3\frac{1}{2}$  per cent., or 70,000*l.* So that, although the receipts of the Government will not be improved by the debentures being raised at a lower rate, the profits of the company will be enhanced. The real risk seems to me to lie not in a needlessly high rate being paid as interest on the debentures, but in the company failing to renew them on their expiration if the market should then be unfavourable. Now, the Government is not pledged to allow the company to raise money by debentures either at any particular rate of interest or for any particular term of years, and the conditions under which money may be thus provided would be a matter of bargain, the power of the Government to obtain fair terms from the company being secured by its right to charge a high or penal rate of interest on money supplied for the railway by the Government. To provide as far as possible against the particular contingency above referred to, it would probably be found desirable to require that the debentures should run for the same period as the first term of the contract, thus placing them in this respect as nearly as possible on the footing of share capital. Nor would there be anything in the contract to prevent the Secretary of State making it a condition, for raising money in excess of the sum named in the contract as the capital therein referred to, that the interest on such amount should be a first charge on the receipts of the undertaking. These details would be matters for consideration when the occasion arose.

8. In accordance with the intimation conveyed to Your Excellency by my telegram of 16th December, negotiations with the promoters of the Bhopal-Cawnpore Railway have proceeded on the basis of the Southern Mahratta terms, and the same terms have been offered to the promoters of the Nagpur-Bengal Railway. I forward, for Your Excellency's information, the draft of a prospectus which has been approved by me, and which the promoters of the first-named scheme will take the first opportunity of issuing to the public. The name of the company, you will observe, is to be the "Indian Midland Railway Company." Copies of the contract shall be forwarded immediately upon its execution.

9. The result of this Company's endeavours to float their scheme will, no doubt, have some influence on the course of the negotiations still pending with Messrs. Hoare, Miller & Co., for the construction of the Nagpore-Bengal Railway, and Your Excellency shall be duly informed when anything definite has been arrived at.

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[ DRAFT. ]

*Extension of the Great Indian Peninsula Railway System, viâ Bhopal to Gwalior, Agra and Cawnpore.*

Interest upon the Capital guaranteed by the Secretary of State for India in Council.

INDIAN MIDLAND RAILWAY COMPANY, LIMITED.

Incorporated under the Companies Act, 1862—1880.

*Capital—£3,000,000 in 150,000 shares of £20 each, with power to borrow to an amount not exceeding the Share Capital.*

10s. per share payable on application, and £1 10s. per share on allotment. Further calls to be made as required, at intervals of not less than three months, in amounts not exceeding £2 per share. Payments in full may be made on allotment, or within three months thereafter, in the option of the Shareholder.

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Term of Contract 50 years, but determinable at option of Government in 1910, 1920, or 1930. Interest payable in Sterling. Guarantee for first seven years, 4 per cent. per annum; permanent guarantee, 3½ per cent., with one fourth total net earnings. Capital repayable on determination of contract.

*Directors.*

COLONEL J. HOLLAND,  
H. W. BLAKE, Esq.,  
A. H. CAMPBELL, Esq.,  
MAJOR-GENERAL H. RIVERS, R.E.  
F. S. CHAPMAN, Esq.,  
ANDREW R. SCOBLE, Esq.,  
T. R. WATT, Esq.,

*Directors of the  
Great Indian Peninsula  
Railway Company.*

LIEUTENANT-GENERAL SIR HENRY DALY, K.C.B., C.I.E., *late Agent to the Governor-General for Central India.*

MAJOR-GENERAL J. S. TREVOR, R.E., C.S.I., *late Director-General of Railways in India.*

*Government Director.*

*Bankers.*

The London and Country Banking Company, Limited, 21, Lombard Street, E.C.

*Solicitors.*

Messrs. White, Borrett & Co., 6, Whitehall Place, S.W.

*Consulting Engineer.*

George Berkley, Esq., M.I.C.E.

*Offices.*

3, New Broad Street, E.C.

*Brokers.*

Messrs. Mullens, Marshall & Co., 4, Lombard Street, E.C.

Messrs. Holland, Balfour & Hamilton, 2, Cushion Court, Old Broad Street, E.C.

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PROSPECTUS.

This Company has been formed by the Directors of the Great Indian Peninsula Railway Company, under the supervision and with the support of the Secretary of State for India, with a view to bring the Great Indian Peninsula Railway into direct communication on a uniform gauge with the system of railways that serve the rich and populous provinces in the North-West of India, and to develop traffic from the important districts of Bundelkhund.

## DESCRIPTION OF LINES.

The accompanying map shows in blue the lines to be undertaken by this Company, as follows:—

	Miles.
1. Bhopal <i>viâ</i> Jhansi to Gwalior . . . . .	258
2. Jhansi to Cawnpore . . . . .	127
3. Jhansi to Manickpur . . . . .	180
4. Etawah to Saugor . . . . .	40
TOTAL . . . . .	605

The routes to be followed have been determined after careful surveys and enquiries regarding traffic and population made under the orders of the Government of India, whose officers estimate the cost of the projected lines at about £4,750,000, or under £8,000 per mile, for a road of 5 ft. 6 in. gauge, sufficiently equipped with rolling stock.

The Gwalior line gives the Great Indian Peninsula Railway, by connection with two short lines already constructed (for obtaining powers for working over which provision is made in the contract), direct access by the shortest route from the sea to the North-West Provinces at Agra, a city containing 150,000 inhabitants, and communicating by rail with Rajputana, the Punjab, and other parts of India.

The Cawnpore line reduces by 142 miles the distance by rail from Bombay to Cawnpore, the chief grain and seed mart of the North-West Provinces, Oudh, and Rohilkhund.

The Manickpur lines open out the British territory in Bundelkhund, providing rail communication on the south into Bengal and Behar by a junction with the East Indian Railway, and on the north into Upper India by a junction with the Main Line of this undertaking.

The Saugor branch connects the military station of that name with the railway system. This branch, under the terms of the contract, may be extended to Kutni (about 80 miles from Saugor), which would bring it into communication with the State line, now under construction, to the Oomaria coal-fields.

The works on the proposed railway are, with the exception of the bridge over the Jumna, at Calpee, of no great magnitude. There are no tunnels, and the bridges, though numerous, are easy of construction. The Secretary of State has put in hand some of the works on the lines, and it is expected that the whole system can be completed and opened to traffic within five years.

## PROSPECTUS OF TRAFFIC.

Despatches of the Government of India laid before the Committee of the House of Commons which sat during last Session on the subject of "East India Railway Communication," set forth the importance they attached to the construction of these lines, and the evidence given before the Committee shows a remarkable concurrence of testimony on the part of witnesses, official, professional, and commercial, to the same effect.

Respecting the lines from Bhopal to Gwalior, and from Jhansi to Cawnpore, the Bombay Chamber of Commerce wrote as follows, on the 21st November 1883:—

"The proposed line would connect the Great Indian Peninsula with the East Indian Railway system by continuous broad-gauge lines, and whilst opening out a country which is populous and fertile, and known as a large wheat and teel seed-

producing district, would shorten through communication between Cawnpore and Bombay by 115\* miles. The Agent to the Governor-General for Central India has declared that the scheme

\* Properly 142.

was one which, after the fullest consideration and consultation with all the authorities connected with that part of India, he had accepted and adopted as an absolutely indispensable line for opening out that most important province; that the country which it would open out from Bhopal to Gwalior was, in the lower portions, exceedingly rich in wheat and well-peopled, and certainly there were no great difficulties in the way of railway construction; that in the neighbourhood of Bhopal and Bhilsa the production of wheat was so enormous in good years that it lay rotting on the ground because there were no means of exportation, and he believed that above Bhilsa, and between Jhansi and Gwalior, which he knew well, the country was fertile and populous."

The Government of Bombay in a letter, dated 22nd December 1883, remark—

"Whatever may be the objections to lend the credit of the State, except within narrow limits, to undertakings which do not promise an immediate profit on invested capital, they cannot apply to the case of a line like that proposed from Bhopal to Gwalior and Cawnpore on which a remunerative traffic is certain."

The Government of the North-West Provinces, in January 1884, observe—

"As these districts lie right across the line of a direct railway thoroughfare between the best and most central districts of the North-West Provinces, *vid* Bhopal and Bombay, the project of running railways through Bundelkhand possesses not only a provincial but also a general importance, as affecting to a large extent the wheat trade which has developed so enormously during the last two years."

The Government of India on the 22nd January 1884 state—

"The line is of primary importance to the rapidly growing export trade in grain and seeds, which is beginning to tax the capabilities of the existing lines to the sea-ports, and will require additional facilities at no distant date."

With regard to the line from Jhansi to Manickpur, the Government of India, in their despatch of 18th August 1883, observe—

"It should skirt, as far as possible, the southern portion of the British district, serving the trade centres of Mau-Ranipur, Mahoba, and Banda. Traffic from the rich country and the towns, such as Raat, between it and the Jhansi-Cawnpore Railway, will resort to one or the other, according to proximity or ultimate destination."

The population of the North-West Provinces, including Oudh, is forty-four millions, according to the census of 1881, and the direct through traffic between those Provinces and Bombay, not only in grain, seeds, and cotton, but also in piece-goods and European manufactures generally, cannot fail to be large and to yield a valuable revenue. The character of the country traversed by the proposed lines compares favourably in point of fertility and population with that served by the Great Indian Peninsula Railway system, upon which the percentages of net earnings per annum in the last four years on the amount of capital expenditure were as follows:—

										£ s. d.
1881	.	.	.	.	.	.	.	.	.	6 5 3
1882	.	.	.	.	.	.	.	.	.	7 6 1
1883	.	.	.	.	.	.	.	.	.	6 16 0
1884	.	.	.	.	.	.	.	.	.	6 0 0

or an average equal to £6 11s. 10d. per cent. over four years.

The gross earnings in the above years averaged £41 9s. 6d. per mile per week, upon a capital outlay of about £18,000 per mile. The cost of the proposed lines is estimated at less than half that of the Great Indian Peninsula Railway, and it will



therefore require a gross receipt of only £25 per mile per week to earn six per cent., even allowing 60 per cent. for working expenses as against 50 per cent., the average of the last four years on the Great Indian Peninsula Railway. The Directors are therefore confident that investors may safely look forward to a substantial profit in excess of four per cent.

#### TERMS OF THE CONTRACT.

The Contract with the Secretary of State is dated and includes the following terms:—

- (1) The duration of the concession is until the 31st day of December 1935, but subject to determination thereof, at the option of the Government, on the 31st December 1910, 1920, or 1930.
- (2) On the expiration or determination of the contract the full share capital is to be repaid.
- (3) The railways are to be of the 5 ft. 6 in. gauge.
- (4) The Government are, during the continuance of the Contract, and under all circumstances, to pay interest on the paid-up capital received into the Treasury of the Secretary of State, half-yearly, in sterling, at the rate of  $3\frac{1}{2}$  per cent. per annum.
- (5) The net earnings of the undertaking from the time the line is opened are to be shared between the Government and the Company, the Government taking three fourths and the Company one fourth. The Company take their share in addition to the interest of  $3\frac{1}{2}$  per cent. to be received from the Government, which is not a charge on the earnings.
- (6) The Government, moreover, guarantee that the Company shall during the first seven years of the Contract receive not less than 4 per cent. per annum on the paid-up capital for interest and share of net traffic earnings taken together.
- (7) The accounts will be made up and the Company's share of earnings paid half-yearly.
- (8) The Government may appoint one Director, with the usual powers of the Government Director on the Boards of the Guaranteed Indian Railways.

General R. Strachey, R.F., C.S.I., F.R.S., Chairman of the Public Works Committee of the Council of the Secretary of State for India, in his evidence before the Committee of the House of Commons, stated the signification of these terms as applicable to the case of the Southern Mahratta Railway to be as follows:—"For four or five years the line will be under construction and in its infancy. After the five years" (in the case of this Company the time is extended to seven years) "it is assumed that the share which the Company will get of the net receipts will probably at least amount to one half per cent., and of this they have to take their chance, but in reality at the end of five years it is hardly possible that they would not be getting 4 per cent."

The extension of the time from five to seven years, during which this Company are guaranteed 4 per cent., almost precludes the possibility of the dividend ever falling below that rate, while it may exceed it even during that period. If the line at any time earns, say, 6 per cent., the shareholders will get  $3\frac{1}{2}$  plus  $1\frac{1}{2}$ , or a total of 5 per cent., and so on according to the earnings of the line.

Copies of the Memorandum and Articles of Association of the Company, and of the Agreement between the Secretary of State and setting forth the contract to be entered into between the Secretary of State and the Company may be seen at the offices of the Company.

Applications made on the enclosed form, accompanied by a payment of 10s. per

share on the number of shares applied for, should be forwarded to the London and County Banking Company, Limited, 21, Lombard Street, London, or any of its branches. If no allotment is made all amounts paid on application will be returned in full. In case of a full allotment a further payment of £1 10s. per share will be required forthwith, and in case of a partial allotment the surplus of the deposit will be appropriated for or towards the payment of the further £1 10s. per share, any remainder being refunded to the applicant. The remaining £18 per share, will be raised by calls in amount not exceeding £2 per share, as may be required, at intervals of not less than three months. Shareholders will be allowed the option of paying up their shares in full at the time of allotment, or within three months thereafter.

Prospectuses and forms of application may be obtained at the offices of this Company, at the Bankers, or of Messrs. Mullens, Marshall & Co., 4, Lombard Street, E.C., and Messrs. Holland, Balfour & Hamilton, 2, Cushion Court, Old Broad Street, E.C.

The subscription lists will open on \_\_\_\_\_ and be closed on \_\_\_\_\_,  
both for London and the country.

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No. 77 (Railway), dated 12th June 1885.

From—The Government of India,  
To—The Secretary of State for India.

We have had the honour to receive Your Lordship's Despatch No. 27R., dated 12th March 1885, on the subject of the terms which it was desirable to concede to the promoters of the "Indian Midland," Nagpore-Bengal, and Bilaspur-Etawah Railways.

2. We are glad to learn that Your Lordship concurs with us in recognising the fact that under the "Southern Mahratta terms," the Government will receive a less share of the net earnings than under the so-called "Bhopal terms," unless those earnings fall below 2 per cent.

We also observe that Your Lordship, while not attaching the same weight as ourselves to the risk, not merely of too high a rate of interest being paid on debentures, but of too large a proportion of the capital being raised by that method, is willing to adopt our suggestion that debenture-interest should be a first charge on the receipts of the undertaking. In the further amendment suggested by Your Lordship, which makes the period of debenture loans correspond with that of the first terms of the contract, we entirely concur.

3. Your Lordship mentions, however, certain indirect considerations which have been deemed to counterbalance the direct pecuniary gain above referred to.

The first of these, that the proprietorship of the undertaking is vested in the Government, is undoubtedly an advantage, but it is one in no way peculiar to the "Southern Mahratta terms." It might as easily be combined with the "Bhopal terms," and we should anticipate no objection on the part of promoters to such a course in case Your Lordship should wish to secure it.

The possession by a Company, in addition to its 3½ per cent. guarantee, of a share in the net earnings, *whatever* be their amount, instead of only when they exceed a fixed minimum, scarcely appears to be advantageous, especially in the case of the lines less likely to be remunerative. Shareholders might well rest content with about 5 per cent. drawn when the line was actually paying only 3 per cent., and feel no incentive to extraordinary efforts to realise a higher profit. Some existing Guaranteed Railways are an illustration of this.

The circumstance, again, that a Company will, under the "Bhopal terms," be guaranteed from the outset a higher rate of interest than that of other securities of the Government of India, is not peculiar to those terms. The "Southern

Mahratta terms" comprise, during the first seven years, not only the same 4 per cent. as the "Bhopal terms," but also, under certain circumstances, a share of all net earnings in addition ; while after that period they ensure about 4 per cent.,

even if the net earnings should only be 1 per cent.

Any objection on the score of exceeding the rate of interest of Government securities applies, therefore, with greater force to the former than to the latter. We may add that it applies likewise to working agreements such as that for the East Indian Railway, whose deferred-annuity holders have received the dividends

			Per cent.
			£ s. d.
1881	.	.	6 4 6
1882	.	.	6 12 4
1883	.	.	6 4 6
1884	.	.	6 12 6
1885	.	.	5 11 5

specified marginally.

4. After all the preceding considerations have been duly taken into account we are free to admit that the advantages and disadvantages of the two forms of concession are pretty evenly balanced. This being so, the only practical guide to a selection appears to be the reception which the money market is willing to accord to them respectively. We would invite attention to the remarks in the same sense in paragraph 5 of our Despatch No. 191 of 9th December 1884.

5. The fact that the promoters of the "Indian Midland" Railway have accepted the "Southern Mahratta terms" indicates an expectation that this reception will be favourable, and we trust that the passing away of political difficulties, combined with the present cheapness of money, may enable them to justify their confidence. In that case, it may be hoped that the promoters of the Nagpore-Bengal Railway will promptly follow their example.

6. On the other hand, it is possible that the exact form of contract may prove an obstacle or that the promoters of the Nagpore-Bengal Railway may find themselves at a disadvantage from the want of influential support, such as that of the Great Indian Peninsula Railway Board which the "Indian Midland" enjoy.

In view of such a contingency, and not with any desire of prolonging useless controversy, we have submitted the preceding remarks, in the hope that they may throw fresh light upon the question, and may assist Your Lordship in coming to final terms with the promoters of the latter, or of both railways if necessary, on whatever basis may at the time of negotiation be ascertained to be most likely to be favourably received by investors.

## 2.—Indian Midland Railway.

Telegram, dated 26th August 1885.

From—Secretary of State, London,

To—Viceroy, Simla.

Subscriptions to Indian Midland Railway Company amount to two millions instead of three offered to public. I have decided to allow Company to proceed on these conditions: First, prepayment by Company of amount already expended by Government; second, Company to proceed with portions of system deemed most expedient by Government; third, obligation of Company to raise third million remains in full force. Despatch follows.

No. 109 (Railway), dated 30th September 1885.

From—The Secretary of State for India,

To—The Government of India.

Your Excellency's Government has been informed by the telegram marginally

*Telegram to Viceroy, dated 26th August 1885:*

"Subscriptions to Indian Midland Railway Company amount to two millions instead of three millions offered to public. I have decided on allowing Company to proceed on following conditions.—First, repayment by Company of amounts already expended by Government. Second, Company to proceed first with the portions of their system which are deemed most expedient by Government. Third, obligation of Company to raise third million remains in full force. Despatch follows."

\* *Telegram from Viceroy, dated 13th July 1885.*

"Unless Indian Midland Company can now be launched upon the terms previously offered, we strongly urge concession of modified terms suggested in our Railway Despatch No. 77, of 12th June last, in order to provide funds for frontier communication and defences. Indian Midland would refund 61 lakhs."

with  $\frac{1}{2}$  per cent. added for seven years, and one fourth of net receipts after the line was opened; but that if 4 per cent. were guaranteed by Government for the terms of the contract, it would be possible to form a Company, and they would then only require one fourth of the profits in excess of the interest. At the same time Your Excellency's telegram\* of 13th July reached me.

2. After giving my best consideration in Council to the whole matter, I decided, in accordance with your recommendation, to concede the terms asked for, and the project was accordingly brought before the public on this basis. Your Excellency's Government has been made aware by my telegram of 26th August 1885 that the capital offered was only subscribed for to the extent of two thirds, and I was doubtful at first whether the undertaking should be allowed to proceed. It appeared to me, however, on a consideration of all the circumstances of the case, that it would not be to the advantage of the Government of India to withdraw from the arrangements which had been provisionally entered into with the promoters, and the Company was accordingly allowed to proceed. It is, of course, to be regretted that a Company which was introduced to the public, supported by a Government guarantee, should have failed to secure more complete support, but I am advised that the failure may be ascribed to causes quite apart from the merits of the scheme itself. Prominent among these are the political uncertainties which have recently affected our north-western frontier, to which may be added the unfavourable time of year at which the scheme was brought out.

3. I forward herewith the correspondence\* which has passed between the promoters and this Office, together with the

\* 1. Letter from Mr. T. R. Watt, dated 6th July 1885.

2. Letter to Mr. T. R. Watt, dated 21st July 1885.

3 and 4. Contracts between Government and Company.

5. Articles of Association.

6. Prospectus of Company.

contracts which have been entered into, and copies of the prospectus and memorandum of association of the Company. Your Excellency will learn from these papers that the Company has been allowed

to proceed with its operations on three conditions. These are,—first, that the sums already expended by Government on any of the lines comprised in the system shall be at once refunded. Secondly, that the available funds then remaining in the Company's hands shall be applied first, to those parts of the system which have been actually commenced by Government, and in a manner satisfactory to your Government, whilst the other portions of the system shall be carried out in such order as shall be decided to be most expedient by your Government. Thirdly, that the obligation of the Company to raise the whole sum of three millions named in the 32nd section of the Contract is to remain in full force, the sum of two millions now raised being accepted as part of the said sum of three millions.

4. It will be for Your Excellency's Government, in accordance with the two first of these conditions, and under the terms of clauses 3 and 6 of the Contract, to consider carefully what directions should now be given to the Company for proceeding with the operations, in view of the present partial subscription of capital and the uncertainty of the Company being able to raise more money at any early period. Steps also should be taken for transferring to the Company the works connected with the project which have already been commenced, the expenditure on which has to be recouped by the Company, and the exact amount of which should be ascertained with the least possible delay.

5. You will learn from the letter from the Directors of 24th August last† that a sum of £1,026,290 will immediately be paid by the Company into the Bank of England, to the credit of Government, which will provide a sufficient amount to meet all past outlay, with a fair surplus for future operations. Doubtless a careful and detailed survey of the route to be traversed by the main line is one of the first points to which the attention of the Company will have to be turned concurrently with the prosecution of the operations of construction already in hand.

6. The question of access of the Company's system to Agra, on which great stress was laid by the promoters during the negotiations, has been settled by a provision embodied in Clause 58 of the Contract, which, in certain specified contingencies, transfers the Gwalior-Agra line to the Company on payment by them of a sum not exceeding £800,000, such sum to be treated as capital of the Company. Notice of any such transfer will of course have to be given to the East Indian Railway Company at the proper time. It will be obvious that your suggestion that the whole of this amount should have been immediately raised and paid over to the Government was one that could not be acted on.

7. As regards rates and fares, full control is reserved to Government by Clause 26 of the Contract, and you will also learn from the enclosed letter‡ from the Secretary of the Great Indian Peninsula Railway that the Directors of that line did agree to adopt, for through traffic between Bombay and the then projected railway now launched as the Indian Midland, the same rates as shall be fixed for through traffic on the lines of the latter system.

8. The manner in which the accounts of the Company are to be kept will be found described in Clauses 46 to 55 of the Contract, from a perusal of which it will be observed that the course which has been followed in respect of the accounts of the Southern Mahratta Railway Company will apply to the accounts of the Indian Midland Company, with such modifications as are apparent.

† Letter from Mr. T. R. Watt, dated 24th November 1884.

‡ Letter from Mr. T. R. Watt, dated 24th November 1884.

9. The Directors of the Company have expressed themselves as hopeful of raising the balance of £1,000,000 required to complete their share capital within no very distant period, and Your Excellency's Government will of course be kept duly informed on this important point.

10. I have communicated a copy of this letter to the Board of the Great Indian Peninsula Railway Company, for their information.

11. Since the above was written, the enclosed\* communication has been received

\* Letter (with enclosure) from Indian Midland Railway Company, dated 7th September 1885.

Ditto to ditto, dated 25th September 1885.

from the Board of the Company, intimating the provisional appointment of Mr. Bell as Chief Engineer of the system, an arrangement which I have sanctioned

subject to the concurrence of your Government being obtained to the several instructions issued to him.

No. 169 (Railway), dated 26th October 1885.

From—The Government of India,

To—The Secretary of State for India.

We have had the honour to receive your Lordship's Despatch No. 109, dated the 30th ultimo, on the subject of the Indian Midland Railway, and in reply beg to forward copies of a Note\* showing the condition, on

\* Not printed.

the 2nd instant, of the operations on the various lines composing the system, as also of a memorandum of conclusions adopted at a conference with Mr. Wilson Bell, the Company's Agent and Chief Engineer, on the 5th instant, and of the instructions on the whole matter which we have now issued.

2. Your Lordship will observe that we have provided, as desired, for the primary object of pushing forward construction on the sections of the system which have been actually commenced, and also for the completion of the surveys of the main line.

3. As regards funds, we have deemed Your Lordship's instructions in the telegram, dated the 23rd ultimo,† and in the despatch under

† From—Secretary of State,  
To—Viceroy.

“Indian Midland Railway. I have sanctioned appointment of Wilson Bell as Company's Agent and Chief Engineer. All instructions issued to him by Board are subject to your concurrence, and operations can be proceeded with in direction desired by you. A despatch on the subject will follow.”

reply, to warrant our making a provisional grant of 5 lakhs of rupees for the operations in immediate prospect. We trust, however, that we may very shortly be favoured with the reply to our telegram of the 26th ultimo, which has been promised in Your Lordship's telegrams of the 7th and 14th instant, so that we may be in a position to make suitable grants for Indian expenditure on the Kalpi Bridge and the Jhansi-Manickpur Section, as soon as the information we have called for has been received. The outlay in England will

consist of that on the girders for the Kalpi, Betwa, Dusan and Ken Bridges, and the other major and minor bridges for the Jhansi Manickpur Section, and can be estimated by Your Lordship from the indents already sent home, which we are of opinion should in all cases be adopted.

4. Considering, however, that this outlay in England will not fall due for some months to come, we trust that Your Lordship will deem the condition of the Company's surplus balance, after meeting past outlay, sufficient to warrant our sanctioning the commencement of earthwork and bridge foundations upon the main line between Bhopal and Kalpi as soon as the land can be acquired, so as to save the best portion of the present season, and to prepare the way for active operations as soon as the Company's further capital shall have been secured. We need scarcely point out that upon the completion of the main line the remunerativeness of the two sections already in hand must very largely depend. Permanent-way for the Jhansi-Manickpur Section will also be required, but its cost will depend upon the descrip-

tion of road decided upon after receipt of the anticipated report from Mr. Wilson Bell.

5. We trust to submit at an early date the account of expenditure to be recouped by the Company, which is called for in paragraph 4 of the despatch under reply.

6. Regarding the agency by which the several works are to be prosecuted, Your Lordship will observe that, with the full concurrence of Mr. Wilson Bell, we have arranged that the section from Cawnpore to Kalpi, including the bridge, shall be completed by the North-Western Provinces Government, which has already advanced it so far, and has a complete and efficient establishment under Major Gacey, R.E., available for the purpose. The remaining operations we propose to transfer entirely to Mr. Wilson Bell, as his establishment becomes adequate to undertake the several works.

7. With reference to the Company's contract, we have at present only two points to bring to your Lordship's notice. Clause 58 makes no mention of our obligations to His Highness the Maharaja of Gwalior in respect of the maintenance of his state carriages, and their haulage, for his personal use, between Gwalior and Agra. Clause 59 appears to be framed on the supposition that the Bhopal Railway consists of two separate sections owned by different parties, whereas it is owned jointly by the Indian Government and the Bhopal State. We presume that both these matters can be adjusted by explanation to the Company.

No. 159 (Railway), dated 19th October 1885.

From—The Government of India,

To—The Secretary of State for India.

In continuation of our Railway Despatch No. 83 of the 2nd June 1883, we have now the honour to forward abstract estimates, prepared after survey, of the Kutni-Etawah Section of the Bilaspur-Etawah Railway. It will be seen that the estimates aggregate Rs. 1,30,45,145 for 162 miles of line against Rs. 1,10,00,000 for 156 miles as previously reported by us on the basis of the results of the preliminary reconnaissances.

2. The estimates for the portions of the line comprising the section from Kutni to Bilaspur are almost complete, and will be forwarded shortly; but we now send those for the Kutni-Etawah Section in advance, so that the Indian Midland Railway Company may be in possession of them at the earliest practicable date.

No. 133 (Railway), dated 3rd December 1885.

From—The Secretary of State for India,

To—The Government of India.

In compliance with the request contained in Your Excellency's Railway letter of the 19th October 1885, No. 159, I have forwarded to the Directors of the Indian Midland Railway Company the abstract estimates, herewith enclosed, of the cost of construction of the line of railway from Etawah to Kutni.

2. You will have learnt from a perusal of the contract which accompanied my Railway Despatch of the 30th September 1885, No. 109, that, under clause 57, the section of the line in question which is between Saugor and Kutni is not included in the present system which the Company have undertaken, the clause providing that the Secretary of State may at any time hereafter during the continuance of this contract require the Company, subject to terms as to the provisions of capital being then agreed upon, to construct it.

3. The question of the date of its construction remains, therefore, for future consideration. It will be desirable that the detailed estimates on which the abstracts forwarded with your letter are based should be handed to the Agent of the Company.

No. 140 (Railway), dated 24th December 1885.

From—The Secretary of State for India,

To—The Government of India.

I have received and considered in Council the letter of your Government, No. 169 (Railway), dated the 26th October, reporting your proceedings in connection with the commencement by the Indian Midland Railway Company of their operations on the undertaking which has been committed to them. In giving directions to the Company's officers you have provided that the construction should be pushed forward on those sections of the system which have been actually begun, and that the surveys of the main line should be completed.

2. I entirely approve of this course, which, as you will see by the letters from the Directors to Mr. Wilson Bell, of the 13th and 27th ultimo, also commended itself to them.

3. With regard to funds, I have to inform you that, in addition to the sum of 1,026,290*l.* referred to in paragraph 5 of my despatch of the 30th September, 1,195,982*l.* has been paid by the Company into the Bank of England to the credit of the Secretary of State in Council. Steps have recently been taken to place the balance of shares which were not subscribed for in August, the present result being that 131,796 of the 150,000 have been issued, leaving 18,204, which, it is expected, will be taken within the next two months. In September 1,405,565*l.* had been paid, in October 103,375*l.*, in November 640,012*l.* 10*s.*, and in December 73,319*l.* 10*s.*

4. You will have received, with my telegram of the 14th ultimo, the estimated expenditure by the Company during the present and the next official years. To this will have to be added the amounts which the Company will recoup to your Government for the works which were executed under your directions before the contract was made, and the cost of which you intend, at an early date, to lay before me.

5. With your Railway letter No. 159, dated the 19th October 1885, you forwarded an estimate of the capital required for the whole section of the Etawah-Saugor and Kutni line, and I pointed out to Your Excellency in reply that the question of proceeding with the section between Saugor and Kutni must, under clause 57 of the Contract, be considered separately whenever it may be thought desirable.

6. The indents for materials required from this country are being duly attended to, and that for the eight Engineers has been complied with.

7. As regards the points raised in paragraph 7 of your letter in connection with the provisions of clauses 58 and 59 of the Contract, they were not overlooked when the Contract was under discussion. That which relates to the maintenance of carriages for the use of His Highness the Maharajah of Gwalior and Agra can be arranged with the Company, and there will be no difficulty, when the time arrives, in carrying out the intentions expressed in clause 59, of transferring to the Company the working and management of the lines in the Bhopal and British territory, in accordance with the conditions of the treaty with Her Highness the Begum.

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No. 24 (Railway), dated 2nd February 1886.

From—The Government of India,

To—The Secretary of State for India.

In continuation of our Railway Despatch No. 169 of the 26th October 1885, we have now the honour to report the further arrangements which we have been able to make with the Agent of the Indian Midland Railway Company for the prosecution of the different lines of railway comprised in their system. Those previously reported have had to be modified somewhat as further experience has been gained, so it will be well to state succinctly how matters stand at present.

2. *Jhansi-Bhopal Section.*—The portion between Jhansi and Lalitpur is being surveyed and estimated for by our own officers on behalf of the Company, and the



work is well forward. Between Bhopal and Lalitpur the surveys and estimates are being prepared by the Company's officers, and such progress has been made that we expect shortly to be able to permit construction work to be started on the portion between Bhopal and Basoda, a distance of 56 miles. The estimates for the remainder of this section should be ready before the monsoon rains of 1886.

3. *Jhansi-Manikpur Section.*—Orders have been issued for the active prosecution of work on the eastermost section of this branch between Manikpur and Banda, and the road is expected to be ready for the permanent-way as soon as it can arrive. At the Jhansi end nothing can be usefully done at present, and in the centre work will only be pushed at the crossing of the Ken river. This programme will enable the rails to be laid continuously from the Manikpur junction.

4. *Jhansi-Cawnpore Section.*—As Your Lordship is aware, this section has hitherto been in the hands of the Government of the North-Western Provinces, and as it is a matter of convenience to the Company, the construction of this branch will be carried out by our officers in the North-Western Provinces. The portion between Cawnpore and Kalpi is expected to be ready for traffic in April next; the bridge over the Jumna is making excellent progress; and work on the portion between Kalpi and Jhansi is just being commenced.

5. *Jhansi-Gwalior Section.*—It is not our intention to push this branch at present, but there are two works on it—a heavy rock-cutting near Gwalior, and the crossing of the Sindh river—which will require much longer time than any of the others, so we have given instructions to put these two works in hand so soon as the estimates for them have been prepared and approved by us.

6. *Jhansi Station site.*—The site of the station at Jhansi depends on a variety of circumstances, and its exact position cannot be determined until both the Civil and Military exigencies are thoroughly considered. A Committee is about to meet and settle the question, but it is not expected that any serious delay will result, as the only line which will be much affected by a change in position is that towards Cawnpore. About 15 miles of this branch may have to be changed, but the surveys are all done, and the works on this part of the Railway are so light that the delay caused by the site of the station not being yet fixed is not likely to retard the ultimate completion of the line.

7. *Etawah-Saugor Section.*—The plans and estimates for this section prepared by our officers have been handed over to the Agent of the Company, and we have also given to the Agent the plans and estimates of the further sections eastwards from Saugor to Kutni on the East Indian Railway.

8. It will thus be seen that we have arranged for work being started on all sections except the Saugor branch, and we hope that the programme of expenditure shown in our Finance Despatch No. 353, dated 29th December 1885, will be worked up to.

9. *Saugor-Kutni Section.*—The construction of the extension of the Etawah-Saugor branch to Kutni depends on the power of the Company to raise money for the work; and now that all the share capital of the Company has been placed, we would call Your Lordship's attention to the power contained in clause 57 of the Company's Contract. It is most desirable for the successful and economical working of the whole Indian Midland system that a connection with the Kutni-Umaria Railway be made at the earliest practicable date, so that coal at a moderate price may be made available. We alluded to this in our Financial Despatch already quoted, but we were not then so well informed of the financial stability of the Company as we are now; the matter, however, is a pressing one both for the Company

Secretary of State's No. 133  
(Railway), dated 3rd December 1885, para. 2.

Secretary of State's No. 140  
(Railway), dated 24th December 1885, para. 5.

and for ourselves, so we would now recommend that Your Lordship should take the action under clause 57 of the Contract which is alluded to in the despatches specified marginally, with a view to the early commencement of this section of the undertaking.

No. 32 (Railway), dated 15th April 1886.

From—The Secretary of State for India,

To—The Government of India.

Before considering the proposal contained in your letter No. 24 (Railway), dated the 2nd February, that the Inland Midland Railway Company should be called upon at once to undertake the construction of the Saugor-Kutni section of their system, under clause 57 of the Contract, I caused the Directors to be asked their opinion on the subject.

2. It appeared to me to be very doubtful whether the chief object of executing this line at the present time, *viz.*, the facilities it would afford for obtaining coal from the Umaria mines, was of sufficient importance to justify the increased outlay

which would have to be incurred during the next year or

\* Dated 22nd March 1886.

two, and I am confirmed in this view by the reply\* which has been received from the Board of Directors, copy of which is enclosed.

3. The Jhansi-Manickpur branch will furnish a direct route for the coal required for the upper portion of the system, and although the lengthened distance, either by this line or *via* Jubbulpore and Itarsi, will add to the cost of conveying the coal to the lower sections, it will nevertheless be available for both.

4. Financial reasons, moreover, have, as you are aware, induced me to pause before incurring fresh liability this year on account of railway extensions, and I am contemplating measures which will, I trust, enable the Secretary of State to raise money for railway purposes on better terms than heretofore.

5. While, therefore, I do not doubt that the line in question will eventually be a useful and important addition to the Indian Midland system, I have decided to postpone calling upon the Company to undertake it.

6. In the meanwhile, as the country through which it would pass is difficult from an engineering point of view and sparsely populated, it may be desirable to ascertain, by fresh examination and surveys, if necessary, whether the most advantageous route has been selected.

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No. 38, dated 22nd March 1886.

From—T. R. WATT, Esq., Managing Director, Indian Midland Ry. Co. (Limited),  
To—The Under-Secretary of State for India.

I have laid before the Board of Directors your letter of the 9th instant, stating that the Government of India now report that "it is desirable for the successful and economical working of the whole Indian Midland system that a connection with the Kutni-Umaria railway should be made, so that coal from the Umaria mines may at a moderate price be available for use when it is open," and requesting, with reference to clause 57 of the Contract, that the Directors will state "what course in their opinion it would be desirable to take both in regard to the raising of the necessary capital for this line and to its construction."

2. The Board desire me to inform you in reply, that they are fully impressed with the importance to the Company of their obtaining coal from the Umaria mines at a moderate price. If, however, this be the main object to be attained by the immediate construction of the line from Kutni to Saugor, the Board do not think that it is sufficient in itself to call for the Company now undertaking this additional liability, as without the capital expenditure which would have to be incurred on the line from Kutni to Saugor, estimated at Rs90,20,252 for 114½ miles, the coal in question will be available for all the Company's lines delivered *via* Etarsi and Bhopal on the one side and *via* Manickpur on the other. The Board would, therefore, prefer to postpone taking up this additional line at present, in order that the Company's efforts may be closely given to pressing forward with and completing as

early as possible the railways composing the undertaking within the terms of the existing Contract. At the same time, should the Government particularly desire that this extension between Kutni and Saugor shall be immediately proceeded with, the Board will be ready to do so, the means of meeting the capital expenditure being, as suggested by the Secretary of State, in the first instance settled.

3. The Board consider that, in that case, the best way of providing the required capital would be by shares in all respects similar to and having the same guarantee as those forming the present share capital. The condition of the market being now favourable for the issue of such shares, the Board would propose that the Company's share capital be increased from 3,000,000 to 4,000,000*l.*, by the creation of 50,000 shares at 20*l.* each, and that such shares be allotted at par to the shareholders of the Indian Midland Railway Company.

### 3.—Bengal-Nagpur Railway.

No. 17 (Railway), dated 19th January 1886.

From—The Government of India,

To—The Secretary of State for India.

With reference to para. 18 of Your Lordship's Despatch No. 367 of the 10th

\* "Your Financial Despatch No. 367, para. 18. See our Railway Despatch No. 191, dated 9th December last, and our Railway Despatch No. 77, dated 12th June last. We beg to recommend coming to final terms with promoters on Indian Midland or Southern Mahratta terms, or whatever reasonable basis may at the time of negotiation be ascertained to be most likely to be favourably received by the money market."

† No. 132 Ry., dated 18th August 1883, paras 38 and 42.

No. 269 F., dated 21st September 1883, paras 11–17.

No. 27 F., dated 29th January 1883, para. 13.

ultimo, and to our reply thereto, dated the 2nd instant, which is quoted in the margin,\* we beg to forward copy of a letter which we have received from the Bengal Chamber of Commerce regarding the Nagpore-Bengal Railway. From this letter, as also from the address delivered to the Bombay Chamber of Commerce on the 13th instant, by their Chairman, the Hon. F. Forbes Adam, Your Lordship will learn the view taken on the subject by the mercantile community. As regards the protective value of the line, we have nothing to add to our previous representations on the subject specified marginally,† and to the more recent opinion given in para. 7 of our Despatch No. 264 (Financial), dated the 22nd September last.

Dated 2nd January 1886.

From—S. E. J. CLARKE, Esq., Secretary, Bengal Chamber of Commerce,

To—The Secretary to the Government of India, P. W. Dept.

My Committee have viewed with satisfaction the passing of the Land Acquisition (Mines) Act as a removal of a cause of delay in the energetic prosecution of a line of railway to connect Calcutta with Nagpore. Considering that this project has been before the Government and the public in one form or another since 1863, and that since 1876 it has formed a frequent subject of correspondence between the Chamber of Commerce and Government, my Committee feel that the arguments which powerfully recommend it to the earnest attention of the Government have been threshed out in a manner to which no other Indian Railway can furnish a comparison. The necessity for such a line has been freely admitted, and as a practical project it has during the last four years engaged a large share of public attention, both in this country and in England. It is unnecessary, therefore, for my Committee to enter into the considerations proving the urgency of the construction of this line, since anything they could now urge has been frequently repeated, and found forcible expression before the recent Parliamentary Committee on the extension of Indian Railways.

My Committee confine themselves, therefore, to pressing upon Government the admitted value of this great work to the political, military, and commercial interests

of India, and to pointing out the extreme desirability that its construction should be resumed at once and should be steadily persevered with as an emergent work, even although political complication may arise to strain the immediate financial resources of the State.

Looking to the immense utility of direct communication between Calcutta and Bombay by a line traversing some of the most fertile and most productive districts of the Empire, and to the great importance to Calcutta of opening up the districts which are at present practically inaccessible for trade purposes, and the produce of which would naturally find an outlet at this port, my Committee would urge that the construction of the Bengal-Nagpore Railway should be taken in hand by the Government and prosecuted energetically without waiting for the formation of a Company to undertake the work. Nothing that the Chamber can say can add to the force of what has been already advanced as to the value of this line as a factor in the competition between India and other great producing countries. But they may point out that the delay in the construction of this Railway is depriving India of an advantage of which she could otherwise readily avail herself.

My Committee trust that the matter will receive the early attention of His Excellency the Viceroy in Council, and that the Government will decide to at once undertake the work, leaving the question of its transfer to a public Company to be settled hereafter.

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No. 24, dated 18th March 1886.

From—The Secretary of State for India,

To—The Government of India.

*Nagpore-Bengal Railway.*  
 \* "Your Financial Despatch No. 367, paragraph 18. See our Railway Despatch No 191, 9th December, and our Despatch No. 77, 12th June. We beg to recommend coming to final terms with promoters on Indian Midland or South Mahratta terms, or whatever reasonable basis may, at time of negotiation, be ascertained to be most likely to be favourably received by the money market.

† Letter from promoters, dated 12th January 1886.

Letter from promoters, dated 27th February 1886.

With reference to Your Excellency's telegram, dated 2nd January 1886,\* and to your Railway letter, No. 17, dated 19th January 1886, I transmit herewith copy of correspondence† which has recently passed between the promoters and this Office in respect to the formation of a Company for the construction and working of the proposed Bengal-Nagpore line.

2. Your Excellency's Government will learn from a perusal of this correspondence that, after consideration of the matter in Council, I have decided that the present is not a convenient time for the prosecution of this scheme, and that I have caused the promoters to be so informed.

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No. 1, dated 12th January 1886.

From—GEORGE MILLER, Esq., Honorary Secretary to the Committee,

To—The Under-Secretary of State for India.

Referring to former correspondence on the subject, I now beg leave to submit, on behalf of the Committee of gentlemen named in my letter, dated 22nd September 1884 (with the exception of Sir John Strachey, G.C.S.I., who has since retired), the following proposal for the construction of a railway to connect the East Indian Railway (from Sitarampore, Burrakur) with the Central Provinces of India, *via* Purulia, Gangpur, Bilaspur, and Nagpore, on the route surveyed by Mr. Parker, C.E., under the orders of the Government of India.

The terms which my Committee now propose are based generally on those lately granted to the Indian Midland Railway Company, as set forth at length in the Secretary of State's contract with that Company, dated the 2nd of October 1885, but my Committee ask for the following modifications thereon :—

*First*—Capital of the Bengal-Nagpore Railway to be 2,000,000*l.* (two million

pounds). The remainder which may be required for the undertaking (say four million pounds) to be raised as is provided in Clause 34 of the Indian Midland Contract, either by the issue of shares or debentures, or otherwise.

*Second*—The contract to be determinable, at option of Government, in 1936, 1946, or any subsequent tenth year.

*Third*—The existing Nagpore-Chhattisgarh State Railway works to be taken over by the Company at a valuation, except as to permanent-way and rolling-stock, for the use of which the Company would pay rent for (say) three years.

*Fourth*—The Secretary of State to guarantee payment of the preliminary expenses connected with the formation and launching of the Company.

*Fifth*—The Committee to have six months within which to bring out the Company, otherwise the concession to lapse.

I am desired to say that the present condition of the money market renders it extremely desirable that the earliest possible answer should be given to this proposal.

No. 72 P. W., dated 27th February 1886.

From—J. A. GODLEY, Esq., Under-Secretary of State for India,

To—The Honorary Secretary to the Committee.

The Secretary of State for India in Council has had under consideration your letter of the 12th ultimo, in which, acting on behalf of the Committee interested in the formation of a Company for constructing a railway from the East Indian Railway at Sitarampore to Nagpore, in the Central Provinces of India, you submit fresh proposals for that purpose.

The terms on which it is now proposed that the Company shall raise the necessary capital for the undertaking in question are based generally on those granted to the Midland Railway Company, which include a guarantee of interest at 4 per cent. and a share to the Company of one fourth of the surplus profits, and it is suggested that the immediate issue of capital should be limited to 2,000,000*l.*, the remainder, estimated at 4,000,000*l.*, being raised either by shares or debentures, as required.

In reply, I am directed to inform you that, having regard to the heavy obligations already incurred in connection with the works now in course of construction, or authorised to be undertaken in India, the Secretary of State in Council is not prepared at the present time to adopt these proposals.

No. 132 (Financial), dated 20th April 1886.

From—The Government of India,

To—The Secretary of State for India.

We beg to acknowledge the receipt of Your Lordship's Despatch No. 24 of 18th ultimo, in which we are informed of the rejection of the offer of Messrs. Hoare, Miller & Company's Committee to construct and work the Nagpore-Bengal Railway, upon terms based generally upon those lately granted to the Indian Midland Company, on the ground that "the present is not a convenient time for the prosecution of this scheme."

2. We do not desire to question the propriety of the decision at which Your Lordship has, for the present, arrived. We consider it right, however, to communicate to Your Lordship certain additional information which has been laid before us since our last Despatches on this subject, and trust that we may be permitted to take advantage of the opportunity in order to explain, in a concise form, the grounds upon which we have hitherto recommended this project. This information may be found useful, in the event of circumstances so far changing as to induce Your Lordship to reconsider the question.

3. Since the receipt of the Despatch now under acknowledgment, the Bombay Government have forwarded to us a communication from the Bombay Chamber of Commerce, of which a copy is appended, requesting information as to the present position of the negotiations for the construction of the Nagpore-Bengal Railway and making further representations in favour of this project.

4. We observe that Your Lordship has postponed sanction to the scheme, in view of "the heavy obligations already incurred in connection with the works now in course of construction or authorised to be undertaken in India." Regarding the necessity for the construction of the line, we understand that there is no difference of opinion, as Your Lordship, in September 1884, decided that the work should be undertaken, and entered into negotiations with the promoters (Despatch No. 121 [Railway], dated 8th October 1884). In respect, however, of the special ground on which Your Lordship's decision is based, we desire to bring to Your Lordship's consideration calculations which we have caused to be carefully prepared, and which seem to us sufficiently to show that the additional burden which the construction of this line would now impose upon us is of considerably less financial importance than may have been supposed. The result of these calculations we here summarise, but we must refer Your Lordship for the calculations themselves to the memorandum enclosed. Should Your Lordship accept them, we trust that the additional financial obligations likely to be incurred by us may be carefully weighed against the considerations involved in the construction of the Railway—considerations which we have caused to be summarised in enclosure No. 3 to this Despatch, so that the whole case may be available in a complete and convenient form.

- (a) The debit of the interest of the project to the Famine Grant has already been sanctioned (No. 367, Financial, dated 10th December 1885), and no increase will therefore be incurred to the total annual expenditure.
- (b) In any case, the net additional charge for interest is relatively inconsiderable, amounting to only half a lakh, 3 lakhs, and 5½ lakhs in the current and two following years respectively, as will be seen from paragraph 9 of the memorandum.
- (c) The Nagpore-Chhatisgarh metre-gauge Railway requires heavy renewals, involving large outlay chargeable against the existing revenue, which are unavoidable, and must be carried out very shortly, unless its conversion to broad gauge, which the project comprises, be undertaken instead. The latter course would be much cheaper in the long run, and is estimated to save some 6 or 7 lakhs, which would be a material set-off to the interest charge of 9 lakhs for the first three years.
- (d) The half lakh for the current year, or even more, can be easily provided by redistribution of allotments under the Famine grant, without disturbing the Budget arrangements.
- (e) Even irrespectively of the Famine grant, the special enhancements of land revenue which the Railway would render possible in the settlements in the Raipur, Bilaspur, and Sambulpur districts now under revision, are likely to prove a valuable set-off towards meeting the net additional interest charge (see paragraph 39 of our Despatch No. 132 Ry., dated 18th August 1883).
- (f) The project is a link between the Great Indian Peninsula and the East Indian Railways, and must bring considerable additional net earnings to both, as pointed out in the memorandum, and also in paragraph 40 of our Despatch No. 132 Ry., dated 18th August 1883.

5. From the above it will appear that we consider that the sanction of the project, so far from practically adding to our obligations, will tend to lighten them directly in more ways than one.

On the other hand, the present appeared to us to be unquestionably a convenient time for launching the project. Money is cheap, and the market continues to be so

favourable to Indian enterprises, that not only have the Southern Mahratta Railway Company recently raised the whole capital for the Mysore Railway, but even the Nizam's State Railway Company have just got what they required by debentures. Materials, specially steel, are also still cheap, as they were shown to be in paragraph 17 (8) of the report of the Parliamentary Committee of 1884. Finally, the receipt of two millions sterling into the Secretary of State's treasury would obviously be a financial convenience, and diminish the loan to be raised this year in England, since the Company's needs, after meeting the refund of 138 lakhs, would probably leave a balance of about 78 lakhs on March 31st, 1887.

6. It will be a source of satisfaction to us if the arguments of the Bombay Chamber of Commerce, and the present statement of our views as to the facts of the case and the financial compensations to the guarantee charge which we have above set forth, should enable Your Lordship to reconsider the present decision and to grant the concession desired.

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Dated 31st March 1886.

From—J. MARSHALL, Esq., Secretary to the Chamber of Commerce, Bombay,

To—The Secretary to the Government of Bombay, P. W. Dept. (Railway).

I am directed by the Committee to request that Government may be pleased to favour the Chamber with such information as may be available regarding the existing position of the negotiations for the construction of the Nagpur-Bengal Railway.

2. From reports which have reached my Committee through non-official channels, there seems reason to believe that the successful floating of the project has been impeded for some time past, and the ultimate success of the proposed Company for developing the undertaking seriously endangered, by the Secretary of State for India insisting upon terms from the promoters which are not likely to prove acceptable to the London market.

3. If this be the case, the Committee venture to hope that His Excellency the Governor in Council will be pleased to transmit to the proper quarter an energetic protest on behalf of this Chamber against any trifling discrepancies in the conditions of contract, or slight difference in the guaranteed rate of interest being allowed to further delay the prosecution of so important a work. Were the remunerative character of the undertaking in the least degree doubtful, a difference of a half per cent. per annum might be allowed due weight in considering whether the scheme should be supported or not; but this line has long passed that stage; its ultimate success, pecuniarily, has been clearly demonstrated, while the necessity of it as a protection from famine is all-important. In fact, it is manifest from the evidence given before the Select Committee on East India Railway Communication in 1884, that the Government of India have throughout, and justly so, regarded the Nagpur-Bengal line as the first link in the entire scheme of famine protection railways. In their report the Select Committee say :—

“What the Government of India desires is continuous broad-gauge communications from the centres of production to the centres of population and to the famine tracts. It is with this object mainly that they earnestly press for the construction of certain lines, especially the Bhopal-Gwalior and the Nagpur-Barrakur Railway, which they desire to entrust to limited Guarantee Companies.”

And again, classing it under Schedule A amongst railways indispensable for protective or other urgent purposes to be completed by the State in default of other agency, the Committee say :—

“This project is one of first-class importance and urgency on account of its protective value, and, moreover, its evident productiveness has induced two distinct firms to make offers to construct it, which are now before the Secretary of State.”

The point is brought out still more clearly in the evidence given by the Hon.

Mr. W. W. Hunter, who, speaking of the proposed railway system for famine protection, said:—

"The system starts from the centre of a wheat-producing country known as the Chhattisgarh division in the eastern part of the Central Provinces. It connects this part with all the famine tracts of India. . . . Starting from Chhattisgarh the proposed railway system sends to the east the Nagpur-Bengal line which will connect this wheat-producing country with Behar. . . .

. . . . I take the Chhattisgarh country as the nucleus of this system of granary lines. It is a large area of about 24,000 square miles, with a small population of 128 persons per square mile, an abundant and uniform rainfall, and a fertile soil. This country is known to native merchants as the land of threshing-floors. It comprises 24,000 square miles, but we have only exact information with regard to three and three-quarter million acres, because a very large part of the country is in the hands of Native Chiefs. With regard to these three and three-quarter millions the facts are as follow:—The peasant holdings are nearly six times the acreage that an average peasant holds in Bengal and twice the acreage which he would hold in Bundelkhand. Besides the area under cultivation there are close on 2,000,000 acres awaiting cultivation, and of those 2,000,000 acres 1,000,000 consist of black wheats-oil. The Chhattisgarh country raises annually 241,000 tons of grain more than the people consume. We also find that the prices are exceedingly low. When I last made the enquiry, wheat had been selling in the local markets at, I think, 1s. 4d. per cwt., which comes to about 5s. a quarter. . . . The country is shut out from the adjoining provinces. Bilaspur is not very far from Jabalpur; but at Jabalpur the wheat must fetch 200 per cent. more than it can be bought for at Bilaspur, in order that it should pay the cost of cart-carriage. The crops of this isolated country are rice, which, on the whole, is the staple crop for local consumption, and wheat, which is raised in large quantities, and which could be raised in still large quantities if there was any chance of selling it with profit. That gives a fair account of the granary country which the Government of India propose to tap by this system of protective lines."

4. Assured by the prominence which the Government of India have thus always given to the line that its prosecution would not be unduly delayed, and feeling, moreover, that the anxious condition of political affairs during the greater portion of the past year afforded some reason for matters of all but the most pressing moment being held to a certain extent in abeyance, the Committee of the Chamber have refrained for a considerable interval from reopening the correspondence on the subject which terminated with the letter from your Department, No. 4., dated 5th January 1885, covering a communication from the Public Works Department of the Government of (India Railway Construction) of 19th December 1884. In that communication it was definitely stated that

"Preliminary operations are in hand for the construction of the Nagpur-Bengal Railway by Government officers pending the formation of a Company, with the promoters of which Her Majesty's Secretary of State is in communication."

My Committee, in the absence of information to the contrary, have naturally accepted this as continuing to be the position of the undertaking until the reports reached them which I have already mentioned in the second paragraph of this letter. With that information before them, however, they feel they cannot, in the interests of the mercantile community which they represent, longer remain silent, and they trust the view they take of the urgency of the matter may commend itself sufficiently to the appreciation of His Excellency the Governor in Council to induce His Excellency to support the Chamber's representations by lending them the countenance of the Government of Bombay.

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*Memorandum on the net additional interest charge for interest which sanction of the Nagpur-Bengal Railway would entail.*

According to the latest data available, the probable cost of the Nagpur-Bengal Railway is as noted below:—

The outlay on the existing Nagpur-Chhattisgarh Railway up to the end of



1886-87, including the cost of the Kanhan bridge, and also including exchange, is now estimated at R1,20,66,000. The cost of the conversion of the open section from Nagpur to Nandgaon, leaving out the cost of the Kanhan bridge, is placed by Mr. Cregeen at R66,07,366. Of this, R20,73,775 is for outlay in England. The exchange on this will amount to R6,91,258. So the total cost of conversion will amount to R72,18,624, and the total cost of the line from Nagpur to Nandgaon will come to R1,93,64,624, say R1,94,00,000. This allows a credit for the full outlay on the metre gauge stock, but apparently no other credits. The credit for the metre-gauge stock appears too high ; but possibly allowing for credits for metre-gauge rails and other materials that can be utilized elsewhere, the cost of the section may stand at, say, R1,85,00,000.

2. The line from Nandgaon to Bilaspur is now estimated at R99,80,076. Allowing for exchange on the English outlay of £289,000, R9,63,000 must be added. This will make the cost of this section R1,09,43,076, say R1,10,00,000.

3. The last estimate of the Sitarampur-Bilaspur Section is apparently R3,17,76,739. In this estimate exchange has apparently been calculated at Re. 1=1s. 8d. Allowing for the fall in exchange, the estimate will probably now not fall short of R3,30,00,000.

The total cost of the whole Railway may thus be placed as under :—

	Lakhs.
Nagpur-Nandgaon . . . . .	185
Nandgaon-Bilaspur . . . . .	110
Bilaspur-Sitarampur . . . . .	330
	<hr/>
TOTAL . . . . .	625
	<hr/>

4. A further provision must be made to meet the value of stores on hand when the line is opened throughout. Allowing R25,00,000 on this account, the total outlay may be placed at R6,50,00,000.

The allocation of the conversion estimate between Capital and Revenue has not yet been determined ; and, for the purposes of the present note, I will assume that the whole cost has to be met by Capital.

5. In addition to the outlay incurred on the open line, the State will have incurred, up to the end of the current year, outlay to the extent of R17,12,000 on the survey, taking up land, and earthwork between Nandgaon and Sitarampur. As already shown in paragraph 2, the estimated outlay on the Nagpur-Nandgaon Section up to the same date is R1,20,66,000. This will make the total outlay incurred by the State on the whole project up to 31st March 1887 R1,37,78,000.

Thus, out of the 650 lakhs estimated to be needed, nearly 138 lakhs have already been provided ; and if the whole line were now sanctioned, the further amount required to complete the Railway (512 lakhs) would probably be needed somewhat as under :—

	Lakhs.
1886-87 . . . . .	50
1887-88 . . . . .	150
1888-89 . . . . .	150
1889-90 . . . . .	130
1890-91 . . . . .	32
	<hr/>
TOTAL . . . . .	512
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6. The interest charge on this additional Capital, calculated at 4 per cent., will be as under :—

	Lakhs.
1886-87 . . . . .	1
1887-88 . . . . .	5
1888-89 . . . . .	11
1889-90 . . . . .	16·6
1890-91 . . . . .	19·84
1891-92 . . . . .	20·48

7. The net earnings of the open Railway during the year 1886-87 are estimated at Rs4,60,000, the working expenses being very high owing to heavy renewals. The gross earnings are estimated at Rs15,00,000, or about Rs190 per mile per week.

If the construction is now undertaken, the carriage of the construction materials during the current year would probably add about  $\frac{1}{2}$  lakh of rupees to the net revenue of the open line.

In 1887-88 at least 40 miles at the Central Provinces end could be opened, say, by 1st January 1888. This and the additional revenue brought on to the open line would probably increase the net revenue by Rs2,00,000.

In 1888-89 the whole line to Bilaspur, about 110 miles, should be opened for the greater portion of the year, and probably about 80 miles at the Bengal end.

The Bilaspur section may well yield a net revenue of  $1\frac{1}{2}$  lakhs, and should add Rs 2 lakhs more to the revenue of the Nagpur-Nandgaon Section. In addition to this, compared with estimates of the current year, a reduction of 2 lakhs in the normal expenses of the Nagpur-Nandgaon Section may be expected, as the heavy renewals will then have come to a close. Allowing no net revenue on the Bengal Section, the line should in this year yield a net revenue of  $5\frac{1}{2}$  lakhs better than in 1886-87.

In 1889-90 an additional 80 miles at each end may be expected to be opened throughout the year. This will make 190 miles open at the Central Provinces end, and 160 miles at the Bengal end.

	R
The first 110 miles this year may be expected to yield . . . . .	8,00,000
and the additional 80 miles . . . . .	3,00,000
Out of this . . . . .	3,00,000

may be assumed to be net revenue.

The net revenue\* of the open line may be expected to be 5 lakhs better than in the current year.

We may expect to realise Rs1,00,000 net from the 160 miles open at the Bengal end in this year.

This will make the net revenue of 1889-90 Rs9,00,000 better than the net revenue of the current year.

About the middle of 1890-91 the line may be expected to be open throughout. The additional mileage opened during 1890-91 may be expected to add Rs3,00,000 to the net revenue earned in 1889-90, or make the net revenue of that year Rs12,00,000 in excess of the net revenue of the current year.

In 1891-92 we may anticipate that the 625 miles of railway will earn 15 lakhs above the net revenue of the current year.

8. The expenses of this line should be low, as it will have cheap coal, and the earnings may be expected to reach 160 a mile a week on an average shortly after opening throughout. This would yield a gross revenue of 52 lakhs; and if this traffic can be worked for 50 per cent, of the gross earnings, as apparently it should be, the net earnings would be 26 lakhs of rupees, or sufficient to cover the interest at 4 per cent. on the assumed capital of 650 lakhs.

9. The increase in charges and revenue due to the construction of this line, compared with the net charges for the current year, will, according to this forecast, be as under—

Year.	Additional interest.	Additional net revenue.	Additional net charge.
	Lakhs.	Lakhs.	Lakhs.
1886-87 . . . . .	1	0·5	0·5
1887-88 . . . . .	5	2·0	3·0
1888-89 . . . . .	11	5·5	5·5
1889-90 . . . . .	16·6	9·0	7·6
1890-91 . . . . .	19·84	12·0	7·84
1891-92 . . . . .	20 48	15·0	5·48

It is needless to remark that if any portion of the Capital is raised at a lower rate than 4 per cent., the additional net charge will be reduced.

10. In addition to the above, the Railway may be expected to bring considerable additional traffic to both the Great Indian Peninsula Railway and the East Indian Railway. The additional net earnings on the former of these lines, with its lead of 600 miles to Bombay, will largely reduce the net extra charge to the State shown above.

11. It will be seen from the above figures that there will be no difficulty in meeting the amount needed for the payment of the additional charge for interest during the current year from the existing grant for Protective Irrigation Works, or even from the ordinary grants for Public Works.

The amounts needed in subsequent years can be provided from the Protective Irrigation grants as already sanctioned by the Secretary of State.

*Résumé of arguments in favour of sanction of the Nagpur-Bengal Railway.*

1. *The protective value* of this project was indicated in 1878\* by Sir John Strachey and Sir Andrew Clarke. During the discussions on protective railways in 1881, General A. Fraser brought it specially forward; Lord Ripon concurred in the importance of the early making of the line; and it was consequently placed

first in the protective scheme then submitted to the Secretary of State.† The question whether the line could be regarded as "Protective," in the sense in which that word was used in the Famine Commissioners' report, was settled in the affirmative by the opinions of the four Famine Commissioners in India—Messrs.

Cunningham, Sullivan, Peile, and Elliott—to whom it was referred.‡ The same

view has been held by a number of other competent authorities.§ Again, the argu-

ment in favour of protective railways, among which the Nagpur-Bengal is expressly named, is summed up in paragraph 17 (1) of the report of the Parliamentary Committee of 1884, and was

evidently a leading consideration in their decision to recommend considerable rail-

way extension. Finally, the Government of India in September last,|| after an exhaustive reconsideration of the whole programme of Internal and Frontier Railways, describe the project in these terms:—

"The Nagpur-Bengal Railway is the backbone of our whole protective system,

\* Despatch No. 132 By., dated 18th August 1883, paragraph 42.

† Despatch No. 92 By., dated 22nd July 1881, Appendix.

‡ Despatch No. 27, dated 29th January 1884, paragraph 13, and enclosure 4.

§ Mr. J. F. K. Hewitt, Commissioner of Chota-Nagpur's note of June 1881, paragraphs 56 and 70.

Sir John Morris, Chief Commissioner, Central Provinces, No. 2314, dated 28th June 1882.

Sir Rivers Thompson, Lieutenant-Governor of Bengal, Nos. 2948 and 4513 By., dated 28th July and 27th December 1883.

Mr. J. B. Fuller, Director of Agriculture, Central Provinces, No. 249, dated 11th July 1883.

Mr. W. B. Jones, Chief Commissioner, Central Provinces' note of 1st August 1883.

|| Despatch No. 264, Financial, dated 22nd September 1885, paragraph 7.

as it taps the country which produces the largest and most reliable surplus of grain in India, is centrally situated, and, when this system is complete, will be connected by radiating lines with every province in India. The construction of this line is essential to the scheme of famine protection."

The Government of India have also more than once, in emphatic terms,\* urged on the Secretary of State the responsibility which lies on the Indian and Home Governments to complete these famine lines, both as the one sure means of saving life, and also as greatly diminishing the cost of meeting famine when it does come.

2. *Its remunerativeness* has been established by a long series of competent authorities—Sir John Morris, Mr. H. H. Risley, Mr. J. B. Fuller, Mr B. Jones, Mr. Parker, and Sir Rivers Thompson,† as also by Mr. C. H. T. Crosthwaite,‡ the Chief Commissioner in the Central Provinces, both in 1884, and also in a letter dated 22nd February last, to the *Manchester Guardian*, of which a copy is appended to this despatch.

3. *Its commercial value* is involved in its remunerativeness, but the certainty that it will largely increase exports of grain, oilseeds, &c., has been dwelt upon by many of the authorities already quoted, and has been specially and repeatedly urged upon the Government by the Chambers of Commerce of Bengal and Bombay. As an illustration of the views of the latter, we may refer to our Despatch No. 17 Ry. of 9th January last, and its enclosures, and to the letter from the Bombay Chamber, dated the 31st ultimo, which is forwarded herewith.

4. *The relief to exchange* which the increased exports due to the line tend to afford is obvious, as explained in paragraph 41 of the Government of India's Despatch No. 132 of 18th August 1883.

5. *Its military, political, and administrative value* has been illustrated in paragraph 38 of the despatch just quoted by reference to remarks by a previous Secretary of State, and is brought to notice by both the Bengal and Central Provinces Government. Mr. W. B. Jones observes, in enclosure No. 5 to that despatch, that "the military importance of this through line would not be inconsiderable, since, in the case of commotion in Upper India, it would afford an almost unassailable line of communication between Calcutta and the west of India."

6. The preceding arguments in favour of the project may be summed up in the following words of Sir Rivers Thompson when deprecating, about two years ago, further delay in "the opening up by a main line of railway of a portion of the country which has in this respect been already too long neglected":—

"The line has been carefully laid out on the ground throughout its entire length, the detailed drawings and estimates have been prepared, all statistical facts have been ascertained, the advantages over alternative lines, as well as its remunerative prospects, have been considered and discussed, and the mercantile community throughout the country are, for reasons which are plainly incontrovertible, urgently pressing for more rapid railway extensions. In this case, moreover, private enterprise has come forward, and is ready to undertake the construction of the line." (Enclosure No. 1 to despatch No. 18 [Railway], dated January 29th, 1884.)

7. Finally, the line has been actually commenced, under the Secretary of State's telegram of 10th September, and Despatch No. 121 Ry. of 9th October 1884. The acquisition of the land for a large portion of the whole length has been effected, a good deal of earthwork was completed before the suspension of operations last spring, and some 17 lakhs of rupees have been spent, as shown in the accompanying memorandum.

Dated 22nd February 1886.

From—C. H. T. CROSTHWAITE, Esq., Chief Commissioner, Central Provinces,  
To—The Editor of *The Manchester Guardian*.

I am glad to see from your issue of the 18th instant that the Bombay Chamber of Commerce is giving renewed attention to the question of constructing the Bengal and Nagpur line of railway. As the present head of the Central Provinces Administration I am greatly interested in this work, and I wish during my stay in England, on furlough, to do all I can to promote it. The Government of India is I believe, anxious to have the work pushed on, but there seems to be some hesitation on the part of the India Office. If this hesitation is caused by financial considerations, it is, I think, groundless. At present, as you are aware, the Great Indian Peninsula line has a terminus at Nagpur. A narrow-gauge line has been constructed by Government from Nagpur to Rajnandgaon, a distance of 150 miles. The capital required for this line was, after much insistence, obtained from the Government of India by the provincial administration, which guaranteed the payment of interest. Some money was also subscribed by the public, also under a provincial guarantee, and  $4\frac{1}{2}$  per cent and half the net profits in excess of  $4\frac{1}{2}$  per cent. Although this little railway has only been open for three years, and works under several disadvantages,—for example, the shortness of the line, the break of gauge at Nagpur, &c.,—it pays well, and the province hopes to derive from it a profit of £20,000 or £30,000 per annum, which will be expended on a system of feeder roads. The temporary terminus of this line, Rajnandgaon, was a mere village, and has now become a busy market town. The feudatory chief to whom it belongs admitted the receipt of 40,000 rupees in one year as dues on the carts which brought grain and seeds for despatch by rail. The present terminus has hardly touched the outside of the large province of Chhattisgarh, which the line is intended to tap. From the best markets there is still a lead of from 40 to 80 miles over which goods have to be conveyed by country carts or pack-bullocks. The line is not long enough to have any appreciable effect on the large and populous district of Sambalpur, or on the large dependencies which are attached to the Central Provinces, such as Kalahundi, Bastar, &c., containing large tracts of country capable of much development. The great pilgrim traffic to Pooree, which would be a source of revenue to the Nagpur-Bengal line, is of course quite lost to the present short line.

I mention these few facts to show how much there is in favour of this undertaking. Apart, however, from the direct receipts, the Government has other sources of gain to look to. The railway will traverse the three districts of Raipur, Bilaspur, and Sambalpur, which contain, in round numbers, 12,000 square miles of land assessable to revenue, not counting the large tracts held by chiefs who pay tribute to the Government. This country contains much wheat and rice land of excellent quality, which now pays about 6*d.* or 7*d.* an acre. Until quite recently the absence of roads and the distance of markets rendered the surplus produce valueless. Large quantities of rice and wheat lay unused, because the people could neither sell nor eat it. The peasantry had plenty of food, but no money for comforts or luxuries. This condition of things has rapidly altered, even under the influence of the present short narrow-gauge railway. Produce has risen in value, the people are acquiring money, and with better railway communication land must rise to the same value which it has in the more accessible districts. In other words, after the through line has been opened for some years the land revenues of these districts will double and treble their present figures. The stamp and excise revenues will also rise. Under these circumstances it is a pity to see the construction of the line delayed for want of confidence in its prospects. In the present state of India and England everything ought to be done to stimulate trade. English workmen are crying out

for employment. The Indian Government is suffering from the fall in the gold value of silver. Everything which tends to increase the exports, to bring money into circulation, and to add to the power which the Indian population has of absorbing silver, will be for the benefit of both countries. The construction of commercial lines likely to prove profitable undertakings is particularly urgent. The Nagpur-Bengal line ranks first among these.

Manchester is deeply interested in this matter. I hope that this letter may be useful in drawing the attention of Manchester manufacturers to the Nagpur-Bengal line, and in inducing them to bring their powerful influence to bear on the authorities in whose hands the matter now rests. The removal of the obstructive Government of Upper Burma has been justly made the subject of congratulation to trade, but I venture to think that the opening of the through line from Nagpur to Calcutta would do more in the immediate future for Manchester and India than the opening up the Irrawaddy.

Telegram, dated 21st May 1886.

From—The Secretary of State for India,

To—Viceroy, Simla.

— Considering increased expense incurred and impending in Burma, and recent fall in exchange, do you adhere to proposals involving further charge, especially if increase gold liability? I refer particularly to Bengal-Nagpur Railway, and re-organization of the Telegraph Department. Promoters of the Railway propose payment of interest during construction out of Capital. Should you approve this, how will you meet probable deficit this year? Please reply by telegraph.

Telegram, dated 25th May 1886.

From—Viceroy, Simla,

To—The Secretary of State for India.

Your telegram of 21st. Bengal-Nagpur Railway. Do we rightly understand proposed payment of interest during construction out of Capital to mean Bengal and North-Western terms, and that we shall have no responsibility for interest on Capital even after construction?

Telegram, dated 26th May 1888.

From—The Secretary of State for India,

To—Viceroy, Simla.

Your Lordship's telegram dated 25th. Bengal-Nagpur Railway. No. The effect would be that when construction was completed, guaranteed interest would have to be paid on Capital enhanced by interest advanced up to that date.

Telegram, dated 29th May 1886.

From—Viceroy, Simla,

To—The Secretary of State for India.

Your telegram of 21st. Roberts, Ilbert, Bayley, and Hope hold strongly that notwithstanding probable expenditure in Burma,—

*First.*—Nagpur-Bengal Railway is imperatively necessary as nucleus of system of insurance against famine.

*Second.*—Present good opportunity should be seized for construction, because political or monetary changes may prevent recurrence of similar one hereafter.

*Third.*—Fall in exchange may be discarded, because reduction in sterling equivalent to rupee outlay, and probable lower gold prices of materials will balance extra rupee remittances for interest. For instance, burden at 1s. 4d. and 1s. 6d. identical. Heavy fall may also much stimulate Railway receipts from exports.

*Fourth.*—Indian Midland terms therefore still suitable, as shown in Despatch 20th April, but may for present itself be modified, if desired, by debit of interest during construction to Capital. Government might retain option of redeeming extra interest charge when convenient to do so out of ordinary revenue, and even secure payment of additional interest charge before dividing surplus profits.

*Fifth.*—Burden of contract on such terms incommensurably small in proportion to famine and other advantages to be secured.

*Sixth.*—Nagpur-Bengal Railway refund would conveniently supply funds for Mandalay extension till 1888-89.

*Seventh.*—Abandonment of Telegraph Reorganisation to be deprecated, but preferable to present sacrifice of Nagpur-Bengal Railway.

Sir A. Colvin, in view of inevitable construction of railway to Mandalay, and of disorganisation of silver market and consequent disorder in finances, is opposed to any proposals involving increased gold liability, and consequent risk of increased charge on that account, and would suspend Nagpur-Bengal Railway for the present; would defer later in the year decision as to Telegraph Department; is strongly opposed to payment of interest during construction out of Capital. The Viceroy is disposed to support Financial Department in financial question of this kind.

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Telegram, dated 3rd June 1886.

From—Viceroy, Simla,

To—Secretary of State for India.

Our telegram 29th. Nagpur-Bengal Railway. Despatch follows explaining more fully grounds of opinions expressed.

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No. 89 (Railway), dated 11th June 1886.

From—The Government of India,

To—The Secretary of State for India.

In continuation of our Railway Despatch No. 113 of the 11th July 1884, we have the honour to forward, for Your Lordship's information, copy of correspondence relating to the present condition of the way and works on the open line of the Nagpur-Chhattisgarh State Railway, the cost of converting that line to the standard gauge, and the estimate for the construction of the Nandgaon-Bilaspur and Bilaspur-Sitarampur sections of the Nagpur-Bengal Railway.

2. With reference to paragraph 4 (c) of our Financial Despatch No. 132 of the 20th April last, we beg to invite perusal of enclosures Nos. 1 and 3, and especially of paragraphs 7 and 22 to 25 of the former, which relate to the present condition of the open line.

3. Regarding the revised estimate of Mr. Cregeen for the Nagpur-Bilaspur section, and the conversion, as well as the previous amounts quoted by him for the Bilaspur-Sitarampur section, we may remark that the figures are for the most part somewhat out of date, and also subject to correction in respect of the rate of exchange and the fall in the price of steel. They may now be considered as superseded by the amount of 625 lakhs given in the memorandum accompanying our Despatch No. 132, Financial, dated 20th April last, which we believe to be as correct an approximation as can, under present circumstances be arrived at.

1.

Telegram, dated 16th June 1886.

From—Viceroy, Simla,  
To—Secretary of State for India.

Our telegram 29th ultimo. Nagpur-Bengal Railway. We approve of modified scheme submitted by Miller comprising purchase existing line, conversion to broad gauge, and extension to Bilaspur, with provision like Indian Midland clause 57, that Company shall complete line when required hereafter by Government. Colvin consents on condition of postponing equivalent expenditure of Capital on uncommenced lines to be selected from scheduled forecast (Appendix to Despatch No. 264, September 22nd, 1885). We all agree to this.

2.

Telegram, dated 19th June 1886.

From—Secretary of State for India,  
To—Viceroy, Simla.

Your telegrams May 29th, June 3rd and 6th. Modified proposals for Railway to Bilaspur will be considered without delay. I have determined to postpone larger scheme of Bengal-Nagpur Railway and other avoidable increases of expenditure. Further borrowing this financial year for public works cannot be authorised. If Mandalay Railway inevitable, reduction must be effected on other lines.

I cannot agree to postpone adjustment of finances in hopes of bi-metallic union, or till probable deficit is ascertained. Prompt steps must be taken to secure equilibrium. Treasury has declined action suggested in our letter January 26th.

3.

No. 185 (Financial), dated 19th June 1886.

From—The Government of India,  
To—The Secretary of State for India.

With reference to the extract quoted marginally from Your Lordship's telegram

"Considering increased expense incurred and impending in Burma, and recent fall in exchange, do you adhere to proposals involving further charge, especially if they increase gold liability? I refer particularly to Bengal-Nagpur Railway, and reorganisation of the Telegraph Department. Promoters of the Railway propose payment of interest during construction out of Capital. Should you approve of this?"

\* \* \* \*

dated the 21st ultimo, and to our reply dated the 29th idem, we now beg to explain more fully than was possible by telegram the grounds for certain of the opinions thus briefly conveyed.

2. Our honourable colleagues, General Sir Frederick Roberts, Mr. Ilbert, Sir Steuart Bayley, and Sir Theodore Hope, hold that provision to meet needs which are really essential and pressing, such as that of the protection of important provinces from famine, and of safeguards from military and political dangers on our frontiers, should be proceeded with irrespectively

of fall in exchange. They do not consider that the fact of the liability being in gold should affect such provision.

3. That the Nagpur-Bengal Railway is an essential and pressing need they deem it almost superfluous to reiterate, in view of the arguments set forth in the *résumé* which accompanied the Government of India's Despatch No. 132 (Financial), dated the 20th April 1886, together with the fact that it was recognised as such in both that communication and the new programme comprised in Despatch No. 264 (Financial), dated 22nd September 1885, and that its construction was



commenced nearly two years ago under Your Lordship's orders, pending its transfer to a Company. The project is not an isolated one, but designed to afford food-supply in the event of famine occurring in any one of several provinces, and its completion is therefore the more imperative.

4. Such being the character of the work, our colleagues named above earnestly recommend taking prompt advantage of the present favourable opportunity of providing for its prosecution, which may at any time pass away under the influence of political or monetary changes. Already upon three occasions such changes have interposed after favourable opportunities for coming to terms with the promoters lay open but had not been utilised, and a delay of four years has resulted, with corresponding loss of financial advantage and increased risk of the superintention of famine before an effective system of food-supply to meet the calamity has been provided. Should the chance once more afforded be allowed to slip away, a most serious responsibility will, they consider, have been incurred.

5. With reference to the question of how far the financial prospects of this project, as set forth in our Despatch No. 132 (Financial) of the 20th April last, are affected by the fall in exchange which has since occurred, our colleagues maintain that the latter has practically had no effect at all, and may be discarded. The reduction in the sterling equivalent of the rupee outlay which a fall implies, and the probable lower gold prices of materials purchased in England, tend to counteract such heavier rupee remittances for interest as it may entail. In fact, a fall does not necessarily increase the gold liability, but may diminish it; for instance, the burden with exchange at 1s. 4d. and at 1s. 6d. may be anticipated to be identical. In illustration of this, they would refer to the memorandum by Lieutenant-Colonel Filgate, R.E., which is appended to this despatch. Moreover, any very considerable fall may be expected to stimulate traffic, and to compensate for additional interest charges.

6. Another consideration which has already been mentioned in paragraph 4 (c) of the Despatch of 20th April, they believe to deserve especial prominence, namely, the unsatisfactory condition of the existing Nagpur-Chhattisgarh metre-gauge railway. Unless the conversion to broad gauge which the construction of the Nagpur-Bengal Railway involves be promptly proceeded with, renewals and remodelling of the metre-gauge track cannot be deferred, with due regard even to the safety of the public. The cost of these will fall, according to rule, upon the current revenue, causing a *present* heavy burden on the finances, and will be in great part absolutely thrown away, in view of the conversion to follow thereafter. In fact, these unprofitable operations will cost more to the State in the current and coming years than the grant of the "Indian Midland terms" to the Company.

7. Our colleagues above named would also invite attention, with reference to paragraph 4 (e) of the same despatch, to the accompanying extract, paragraphs 11 and 12, from Note by Mr. J. B. Fuller, the Commissioner of Settlements in the Central Provinces, upon the extent to which the construction of the Nagpur-Bengal Railway will warrant the enhancement of land revenue in the Chhattisgarh Division. It will be seen that, in Mr. Fuller's opinion, "there cannot be the smallest doubt that the prompt construction of the railway would immensely strengthen the hands of Government in taking at once all that it is now entitled to take, and in imposing on the people a larger enhancement than it would otherwise have felt safe in imposing." We may mention, however, that Mr. Fuller appears to be unaware of the rapidity with which the railway if sanctioned at once could be extended to Raipur, and onwards into the Bilaspur District. It would also, in the event of such sanction, be matter for consideration whether arrangements could not be made which would enable the enhancements due to the railway to come gradually into effect during the new settlements as soon as the opening of successive sections of the line justified their application.

8. The advantages in respect of ways and means which were shown in paragraph 5 of the same despatch to be attendant on an early concession to the Com-

rany, has also, in the opinion of our colleagues already named, been illustrated and accentuated by the recent fall in exchange. If the Secretary of State had in his treasury the two or three millions which the Company would raise to start with, he need not be under so much apprehension as to selling the amount of bills for the year, and need not feel obliged to press them on a falling market, at times when the fall seemed likely to be temporary and due to panic. The additional money received would enable him to take his own time. The portion of the capital which would accrue as refund would be an actual reduction of the drawings for the year, and much of the balance would remain available for a considerable period. If it were known that the drawings, after being specially reduced for a while, would be resumed in diminished total amount, this might under certain circumstances help to restore confidence.

9. A further advantage of a collateral nature may be found in the fact that the refund might, if thought desirable, be applied towards the extension of the Burma Railway to Mandalay, thus avoiding special borrowing at present on that account, and deferring the raising of the balance which the line would require till 1888-89.

10 Under the circumstances, therefore, our colleagues already named consider that the position, as set forth in the Despatch of 20th April, substantially holds good, and that the grant of "Indian Midland terms" would still be suitable. It will be seen from the despatch already quoted, and Colonel Filgate's memorandum, that the actual net interest charge would probably only be half a lakh this year and three lakhs next year—amounts which are relatively very small, and involve no addition to the Budget arrangements, since they fall on the Famine grant. These estimates, moreover, are maxima, irrespective of the various sets-off specified, and it may still be safely said that "the sanction of the project, so far from practically adding to our obligations, will tend to lighten them in more ways than one."

It should likewise be borne in mind that as soon as the line pays 4 per cent., which all the best authorities concur in anticipating that it will do within five years after opening, even the direct burden, such as it may be, will disappear.

11. If, however, an absolute freedom from all risk of present burden be desired, then they see no objection to the debit to Capital of interest during construction of the line. This course is theoretically unobjectionable whenever it is adopted for sufficient reason, and a suitable limit is fixed to the period during which "construction" is to be deemed to continue. The system was started in 1882, with the approval of the Secretary of State himself, in the case of the Bengal and North-Western Railway; and though the market at first did not understand it, the shares

\* Financial Despatches No 29, dated 23rd January 1883, paragraphs 60—65, and No. 27, dated 29th January 1884, paragraph 17.  
† Despatches No. 269, Financial, dated 24th September 1883, paragraph 17, and No. 132 B., dated 18th August 1883, paragraph 37.

are now above par. The Government of India has given general opinions in its favour on two\* occasions, and has also twice recommended its application to this very Nagpur-Bengal Railway.† Moreover,

the "Bengal and North-Western" terms met with the full approval of the Parliamentary Committee of 1884. The urgent need for this Railway, no less than our present financial difficulties, are circumstances warranting the adoption of the principle, and there would be no difficulty in fixing a suitable term after which debit of interest to Capital should cease.

\* A concession similar in all respects to that of the Bengal and North-Western Railway would in some respects be the most simple solution of the whole case, but this perhaps might not be acceptable to the promoters or the money market. The combination of the system with a guarantee to run from completion may, therefore, unobjectionably be agreed to, and is, indeed, precisely what was suggested in the Despatch of 18th August 1883, just referred to. Whatever objection may be felt to the increase of the Capital cost of the line, if purchased on the termination of the contract, would be sufficiently met by providing a power to Government to redeem the advances to Capital, whenever it desired to do so.

12. With reference to the objection which may be put forward that a heavy fall in exchange will affect the entire finances, and not merely the case of the Nagpur-Bengal Railway, that the present state of the silver market creates a state of deficit, and that therefore we ought to accept no fresh risk whatever, however minimised, which may add to our sterling obligations, our colleagues would offer a three-fold reply.

They consider it proved that the railway will not, all things considered, practically add to our direct obligations at all, and that it will very greatly lighten them, whenever famine occurs, as in the long run it inevitably must, in one or more of the provinces which the railway is specially designed to relieve.

Admitting, however, for the sake of argument, that there may be an extra obligation in one form or another to the extent of some portion of the direct interest charge, they think that, in dealing with the question, due regard should be had to general as well as financial considerations, and that the argument against avoiding, under present circumstances, even a very small financial risk has been pushed too far. Certain new charges are even now recognised as unavoidable, and will be so irrespectively of the course of exchange. The question is, whether this charge should be one of them. Considering that it is so extremely small in amount, that it may be safeguarded considerably, and that it affords a very large financial assurance in the event of famine, they hold that it should be so.

Finally, the charge is debitable to the Famine grant, and will involve no extra burden, unless, and until, the whole of the remaining unappropriated portion of that grant has been diverted from its recognised application towards meeting loss by exchange—a contingency which may, for many reasons, be treated as improbable, at any rate in the near future.

13. With reference to Your Lordship's enquiry regarding the urgency of the reorganisation of the Telegraph Department, our colleagues already named would greatly regret on general grounds the postponement of a measure of relief administratively so desirable. Considering, however, that it is estimated to entail a charge

	R
1887 . . .	94,500
1888 . . .	1,50,000
1889 . . .	1,60,000
1890 . . .	1,95,600
1891 . . .	1,91,200
1892 . . .	1,64,900
1893 . . .	1,58,200
1894 . . .	1,25,100
1895 . . .	1,30,900
1896 . . .	97,800

amounting to from one to nearly two lakhs per annum during the next five years, averaging about a lakh and a half during the next ten, and costing thereafter about a lakh permanently, they reckon it as an obligation at least equal, when the items set off are taken into consideration, to that which the Nagpur-Bengal Railway may possibly entail on the most unfavourable assumptions. If the choice lies between the interests of a small body of public servants, however deserving, and those of the millions of people whom the railway would partially ensure against famine, and of the general tax-payer, who must eventually provide millions of extra outlay, in default of such insurance, they think that the latter interests must prevail. To sanction a new obligation on behalf of the former, while refusing to incur any risk on behalf of the latter, on the ground of the condition of exchange and the finances, would be a manifest inconsistency.

14. Our honourable colleague General Newmarch only took his seat on the 29th ultimo, and therefore expressed no opinion in our telegram of that date. On full consideration he now desires to express his concurrence with our four colleagues whose views are set forth in the preceding paragraphs.

15. The opinion of our honourable colleague Sir Auckland Colvin is expressed in a separate Minute appended to this despatch.

16. To the Hon. Sir Auckland Colvin's Minute our five colleagues do not feel called upon to offer any lengthy rejoinder. They will merely make the following remarks.

Their argument regarding the fall of exchange is evidently misunderstood. As to whatever fall may occur up to the date of launching the project, it does not

depend on the assumption alluded to, but rather on the fact, to which reference is not made, that the fall will reduce the sterling equivalent of the rupee outlay. As to a fall subsequent to launching, though the increase of railway receipts is admitted, no account is taken of the corresponding increase of exports, and its counter-acting effect upon the fall itself.

They are not of opinion that Mr. Fuller's report bears out, to the extent suggested by their honourable colleague, the depreciatory views offered by him regarding the value of the railway towards enhanced settlements.

The statement made in paragraph 8 of the Minute regarding the interest charge for the Indian Midland Railway is misleading, since the gross figure is given instead of the net, and the analogy with that line suggested is fallacious, because the latter has not the advantage of a long and paying open section to start with, which the Nagpur-Bengal project possesses.

The case is argued throughout as if the proposed project would be a considerable financial burden—an assumption neither warranted by the evidence nor compatible with the statement made in the Despatch of 20th April last, in which Sir Auckland Colvin concurred, that "the sanction of the project, so far from practically adding to our obligations, will tend to lighten them directly in more ways than one." Thus, no notice is taken of the facts that even the direct charge will cease as soon as the line pays 4 per cent., and that the *present* burden to the finances will be greater if the project is postponed than if it is sanctioned, and that a great portion of that burden will eventually be money absolutely thrown away. Similarly, it is not mentioned in paragraph 7 that future purchase may be optional, that the interest charge alluded to would be trifling, and would become practically infinitesimal if redemption were soon resorted to.

The argument in paragraph 9, that the charge for this project (supposing that there be any) is optional, and such as it is possible to avoid, amounts to a *petitio principii*. It is as optional as the charge for Frontier Railways, but no more so—perhaps less, as argued in paragraph 12 of the Secret Despatch No. 25, dated 22nd September 1884, because the eventual advent of famine may be anticipated with more confidence than that of complications on our North-Western frontier.

Finally, the general argument, especially in the second, third, and fifth paragraphs of the Minute, appears to be scarcely relevant to the practical issue. There is no question now of whether some vast general scheme, necessitating taxation, shall be inaugurated or laid aside. Since the views of the Government of India and the Parliamentary Committee, to which reference is made, were put forth, the system of Frontier Railways has necessarily been added to, and has transformed, the programme, while a fall in exchange has lately supervened. If any new taxation should be found eventually necessary, it cannot be attributed specifically to the original rather than the later obligations, more especially since a new source whence to meet such of the former as the Nagpur-Bengal Railway has lately been provided in the Famine Insurance grant. The question now at issue is in reality very simple. The Nagpur-Bengal Railway is shown to involve a direct charge extremely small in amount, which is expected to disappear shortly, and is counter-balanced by indirect items virtually cancelling its burden. It is also shown to afford an important insurance against heavy outlay in the event of famine. Is there any valid reason why this insurance should be foregone, and the risk of such heavy outlay incurred, especially when this course will involve a heavier present burden than that of sanctioning the railway?

17. His Excellency the Viceroy, while fully acknowledging the cogency of the considerations set forth in the foregoing paragraphs, is disposed to coincide in the views of his Financial advisers in regard to the risk which may arise from an increase of the gold obligations of India as long as silver remains in its present unstable condition.

*Memorandum by COLONEL A. J. FILGATE, R.E., Accountant-General, Public Works Department, dated 3rd June 1888.*

In the enclosure to Despatch No. 132, dated 20th April 1886, it was estimated that the further outlay needed to complete the Nagpur-Bengal Railway after the close of the current year, placing exchange at 1s. 6d. per rupee, would be 512 lakhs.

This outlay was distributed as under—

		Lakhs	or	Sterling.
1886-87	. . . . .	50		375,000
1887-88	. . . . .	150		1,125,000
1888-89	. . . . .	150		1,125,000
1889-90	. . . . .	130		975,000
1890-91	. . . . .	32		240,000
TOTAL		512		<u>£3,840,000</u>

2. It is desirable to see what effect a serious fall in exchange (say to 1s. 4d.) would have on the finances of the Empire in connection with the railway.

3. We may assume that the fall will not affect the rupee outlay in India. It is also probable that the gold prices of the articles purchased in England for the railway will, as heretofore, follow the fall in the gold price of silver. If this is the case, the outlay in each year in sterling will be as follows:—

		£
1886-87	. . . . .	333,333
1887-88	. . . . .	1,000,000
1888-89	. . . . .	1,000,000
1889-90	. . . . .	866,666
1890-91	. . . . .	213,334
TOTAL		<u>3,413,333</u>

It is needless to say that the interest on this sum in rupees, at 1s. 4d. exchange, will be precisely the same as the interest on £3,840,000 at 1s. 6d. exchange, and under these conditions, while the railway will cost £426,667 less, the burden on the finances of India will remain the same.

4. Supposing, however, for the sake of example, that gold prices generally in England do not fall in the same ratio as the gold prices of silver, and that, owing to the fall of 2d. in the exchange, the line will now cost £3,500,000; under this condition the transactions may be expected to assume the following aspect:—

Outlay each year.		£
1886-87	. . . . .	340,000
1887-88	. . . . .	1,030,000
1888-89	. . . . .	1,030,000
1889-90	. . . . .	880,000
1890-91	. . . . .	220,000
TOTAL		<u>3,500,000</u>

The interest charge on this outlay, at exchange of 1s. 4d., compared with the interest charge on the Capital of the line with exchange of 1s. 6d., is as follows:—

Exchange 1s. 4d.		Exchange Difference.	
sterling.		1s. 6d.	More.
£	₹	₹	₹
1886-87	. . . 6,800	1,02,000	1,00,000 2,000
1887-88	. . . 34,200	5,13,000	5,00,000 13,000
1888-89	. . . 75,400	11,31,000	11,00,000 31,000
1889-90	. . . 113,600	17,04,000	16,60,000 44,000
1890-91	. . . 135,000	20,34,000	19,84,000 50,000
1891-92	. . . 140,000	21,00,000	20,48,000 52,000

It will be noticed that the difference is but slight, and it may be safely anticipated that the fall in exchange which is supposed to have led to the additional charge for interest will fully compensate the State by increased Traffic Revenue.

5. It may thus be safely assumed that the net additional charge to the State due to the construction of the Nagpur-Bengal Railway, even if there be a fall of 2*d.* in the exchange, will not exceed the amount stated in the enclosure to the despatch alluded to, *viz.*,—

	Lakhs.
1886-87 . . . . .	5
1887-88 . . . . .	3.0
1888-89 . . . . .	5.5
1889-90 . . . . .	7.6
1890-91 . . . . .	7.84
1891-92 . . . . .	5.84

and the charge may be less, as the estimate is by no means a sanguine one. It cannot reasonably be maintained that the above additional charges will, under any circumstances, seriously embarrass the finances of the State, and, judging from the opinion expressed by the Government of India on many occasions during the last five years, as to the importance of the Railway for Famine protection, the line should apparently now be undertaken, even at the risk of increasing or incurring a deficit in the Finance and Revenue Accounts.

6. These calculations, however, are extreme ones. They take no account of the additional earnings which will accrue to the Government through the East Indian and Great Indian Peninsula Railways, over one or other of which the whole export and import traffic of the line must necessarily pass, or of the other collateral gains shown in the despatch alluded to. Finally, there can be no doubt that if famine should occur in the tracts that could be supplied with grain by means of this Railway, the saving that would be effected, even in one year, by its agency, would far exceed the amount of burden which the construction of the Railway would throw on the State.

7. The proposal that interest during construction of the line shall be paid out of Capital, and a guarantee on the Indian Midland principle commence on its completion, may next be considered. I am very much opposed to charging interest during construction to Capital under ordinary circumstances, but the early construction of this railway is so important that, as a special case, this plan might be adopted sooner than allow the work being further postponed. The line, if now commenced, will probably be completed at latest by the 30th June 1890. The interest accruing in the meanwhile on the Capital still needed, less the anticipated additional revenue during the same period, will, at compound interest at 4 per cent., amount to about 22 lakhs on the 30th June 1890. So the adoption of this procedure would add to the capital outlay and throw an additional permanent charge of about R88,000 per annum on the Revenues of India. This is not a large outlay to gain an important end.

Should this course be adopted, however, the Government might retain the option of meeting the interest charge hereafter out of ordinary revenues, while the liability of the Company would remain to meet this sum of R88,000 as a permanent first charge against the net revenue of the line. In fact, the amount might be allowed to remain in the Company's Capital account, but could be removed, when convenient, from the Government Capital account. Government would by this means secure the payment of the additional interest charge of R88,000 per annum before dividing any surplus profits.

8. Again, under the Indian Midland terms, with the modification of charging interest to Capital during construction, no charge against the Indian revenues would arise until, say, 30th June 1890; but this escape of immediate burden would be counterbalanced by a future additional annual charge of R88,000. This charge however, Government might keep an option of redeeming at its own convenience.

*extract, paragraphs 11 and 12, from a Note by J. B. FULLER, Esq., Commissioner of Settlements and Agriculture, Central Provinces, dated 10th May 1886.*

11. It would appear, then, that the extension of the Chhattisgarh line to the headquarters of the Raipur, Bilaspur, and Sambalpur districts would bring about a rise in prices which would warrant an enhancement of 22 per cent. in Raipur, and of 50 per cent. in Bilaspur and Sambalpur, unless Government relinquishes to the malguzars a portion of the increase in profits. The railway would further enable the people to sell at a profit a large amount of produce which is now lost to the country from lack of transport, or which might be grown with a small amount of extra trouble, were transport for it available.

But the increase of revenue to which the Government is entitled from these districts on grounds which are quite independent of any further extension of the railway, is so large, that it is doubtful whether it would be possible to enhance any further at present on account of the railway. The extension of the railway points very clearly to the advisability of making short-term settlements. But it cannot be expected to bring about an increase of revenue at the present assessment.

Moreover, setting aside the fact that the railway would give Government merely a claim to more than it could take from the people, it is exceedingly improbable that it would be completed in time to enable Settlement Officers to take its effect into account in framing their assessments, unless indeed they assessed on prospective assets.

12. But, however this may be, there cannot be the smallest doubt that the prompt construction of the railway would immensely strengthen the hands of Government in taking at once all that it is now entitled to take, and in imposing on the people a larger enhancement than it would have otherwise felt safe in imposing.

On this ground the railway, if constructed at once, may be fairly credited with a proportion of the revenue enhancement which may be anticipated from the Chhattisgarh Division. This enhancement can hardly be less than 4½ lakhs rupees. The revenue of the Raipur khalsa will without doubt bear enhancement from Rs. 5,21,000 to Rs. 7,50,000. It should be possible to raise that of Bilaspur from Rs. 2,44,000 to Rs. 4,00,000; and the Rs. 93,000 which Sambalpur now pays, could, it would appear, be safely raised to Rs. 1,50,000.

*Minute by SIR AUCKLAND COLVIN, K.C.G., C.I.E., dated 8th June 1886.*

The point on which the Secretary of State has asked our opinion is whether, in view of increased expenditure incurred and impending in Burma, and of the present state of the silver market, we still recommend the construction of the Nagpur-Bengal Railway. It may be presumed that our Despatch of April 20th, 1886, was before the Secretary of State when, on 21st May, he telegraphed this enquiry.

2. The basis on which, in the Budget of March, we calculated the discharge of our financial engagements in gold in the year 1886-87 was 1s. 6d. When in April we sent home the despatch above referred to, exchange stood at about 1s. 5½d. Before the Secretary of State telegraphed in May a heavy fall had begun, and the market was disorganised. At present the Secretary of State is holding up his bills, and it is impossible to say what the rate would be if he were selling the full normal amount. In any case there is a possibility of something less than one crore of rupees being added to the expenditure for which we made provision in the Budget of 1886-87 on account of exchange. Hence, at the same time that the Secretary of State made the above enquiry, he asked also how we propose to meet the probable deficit.

3. I have thought it necessary to point out *in limine* that the probability of a

deficit in the current year was present to the Secretary of State's mind when he asked us whether we still propose to proceed with the Nagpur-Bengal Railway, because the scheme of internal railways, of which that project is a part, rests on the understanding that taxation is on no account to be imposed to provide for them. In other words, that scheme supposed a state of financial surplus, or at least of equilibrium, and not of deficit. The Parliamentary Committee, endorsing the declaration of the Government of India itself, were very emphatic on this point:—

Report of the Select Committee on East Indian Railway, dated 18th July 1884, paragraph 34.

most emphatically to enforce the declaration of the Government of India, made by Major Conway-Gordon and Mr. Westland, that the proposed extension of railways should not involve additional taxation."

In the present year alone we have borrowed £6,000,000, which at 3 per cent. will entail a burden on our revenues next year of £180,000 true sterling, of which, however, about £54,000 takes the place of liabilities previously existing. As from the fall in silver which has occurred since we resolved to borrow this year, we are likely, unless fresh measures are taken during the year to strengthen our position, to find ourselves at its close in considerable deficit, we must meet this sum either from the proceeds of increased taxation, or from transfer of the Famine grant. The latter, assuming that it is not wholly swallowed up by the fall in silver (on which point I have more to say in a later paragraph), is essentially a reserve intended to obviate the need for additional taxation when famine occurs, and its absorption to meet ordinary expenditure must on the occurrence of any emergency involve in all probability an increase of taxation. We shall have further to meet interest on the capital—say 2 millions—required for the Upper Burma line, which, for political reasons, I regard as absolutely essential. Letting alone, therefore, the interest on the capital for the projected Nagpur-Bengal Railway, we have this year incurred, or are about immediately to incur, expenditure which will involve a new annual charge of £206,000 true sterling, while our revenues suddenly threaten to fall considerably before our expenditure.

4. It is, therefore, unquestionable to me that to proceed with the Nagpur-Bengal Railway at present is in direct opposition to our declared policy which we have seen endorsed by the Parliamentary Committee. The position is not affected by the contention that for the next five years we shall have to pay comparatively small amounts on account of our guarantee to that Railway. The policy put forward in 1884 assumed a state of financial equilibrium, in which surplus funds may reasonably be believed to be available to meet interest on the various projects embodied in the scheme put forward by this Government. This is not our position in 1886, though in 1883 and 1884 it appeared to be so. The same reasoning, it will be urged, applies to every project embodied in the Railway proposals submitted to that Committee. It does. I am not now called upon to pronounce definitely in regard to other projects. But I avail myself of the opportunity which has been thus afforded me of recording my opinion that the point of view at which, from the course of events during the last eight weeks, I am now obliged to place myself, is opposed to the prosecution, until our financial position is re-established, of any railways (the Upper Burma Railway apart) other than those in the active construction of which we are at the present moment positively engaged.

5. If I am charged with desiring to introduce a sudden change into the policy but recently adopted, I can only reply that the basis on which that policy rested has been undermined by the subsequent fall in silver. No one concurs more fully than I in the remarks of that Committee as to "the mischief occasioned by constant fluctuations of policy in the construction of railways," or in the justice of their recommendation "that a careful forecast having been made of future requirements for public works over a considerable term of years, such a scale of expenditure

Parliamentary Committee's Report, paragraph 29.



upon railways should be adopted as can reasonably be maintained." But the experience of the last two years has incontestably shown that it is impossible, at least in the present circumstances of India and its finances, to state, except within the very narrowest limits, what is reasonable. In a state of deficit, I consider the immediate further prosecution of the scheme of 1884 as a whole certain to prove impracticable, and as being therefore unreasonable; and I regard the Nagpur-Bengal Railway project, among the rest, as a project which we are not warranted in accepting, because we have no longer a surplus from which to provide payment of interest during construction. I think that to give a concession for it at present would be in contradiction to the letter and the spirit of our own declarations, and of the Parliamentary Committee's recommendations.

6 It is contended that the burden of the Nagpur-Bengal project on our finances is not affected by the fall in the exchange which has occurred since 20th April. I do not see, I may say in passing, any proof of the assumption which underlies this argument, *viz.*, that a proportionate fall in the prices of material immediately follows upon a sudden fall in silver. But the point with which we are concerned is, not the fall in the exchange which has recently occurred, but the further fall which may and, if silver remains demonitised in Europe, must occur. The burden of the recent fall may possibly (though I doubt it) be balanced by the average fall in the prices of material during the period of construction; but that will not balance the burden of the difference between the present rate of exchange and the rate which may be established by any future fall. Thus, assuming that if the capital is raised when the rate of exchange is 1s. 5d., the total amount required is £3,600,000 true sterling, a fall in the rate of exchange to 1s. 4d. will increase the annual interest charge by £1,27,000. This in itself may not seem very considerable; but the burden of the whole of our already existing gold liabilities would be simultaneously raised by the fall from 1s. 5d. to 1s. 4d. in the same proportion. It is further pointed out that the Nagpur-Bengal Railway will increase our railway receipts. Very possibly; but in proportion as exchange falls a greater proportion of railway receipts (which are in silver) will be required to meet gold dividends in England, before the Government can receive its share of profits. In proportion also as we cumulate payments to be made in gold in England, whether by Government or by companies, we depress exchange against ourselves. Both these points must be taken into consideration when hopeful views are expressed as to the effects on our revenues of increased receipts from the Nagpur-Bengal Railway. Finally, I believe I am right in saying that we cannot look to any early increase of land revenue through the construction of the Nagpur-Bengal Railway. At the ensuing revision of settlements the increase of land revenue must, I believe, in any case, from quite independent causes, be so heavy that for some years to come no account can be taken of enhancement of rent, and consequent increase of land revenue, which may be due to the introduction of the railway.

7. To the grant of the Bengal North-Western terms I have no objection, if a company can be got to accept them. In the present prospects of exchange, I shall be surprised if any company does accept them, involving, as they do, all absence of any guarantee. I am entirely opposed to including interest on capital during construction if a Government guarantee is given. It provides an escape from immediate difficulty by increasing our ultimate charges. It will be remembered that we have already charged the cost of Frontier Railways and Coast Defences to borrowed money. With regard to the suggestion that, "whatever objection may

Paragraph 10 of Draft be felt to the increase of the capital cost of the line, if Despatch. purchased on the termination of the contract, would be sufficiently met by providing a power to Government to redeem the advances to capital, whenever it is desired to do so," I answer that our successors will have their own burden—a burden to which the circumstances of the last two and a half

years have already compelled us very seriously to add ; and I do not think that we have any right to dispose of our own present difficulty by transferring to those who come after us the option, if they can do so, of redeeming advances made in our day.

8. I am unable to agree that the appropriation of the whole of the Famine grant to ordinary expenditure in the near future is improbable, unless, indeed, we are to resort to taxation, which, on political grounds, I hold to be most impolitic. I believe the appropriation of the Famine grant, on the contrary, to be imminent. In the present year a sum amounting to Rs13,87,000 is assigned from this grant to meet interest payable on capital raised for the construction of the Indian Midland Railway, and the portion so assigned will steadily increase during the next few years. The balance of the grant must, in prudence, be kept in reserve to meet the probable increased cost of exchange. I see, therefore, no probability now of meeting the charge for interest during construction from the Famine grant.

9. I think, further, that to press at this present time for any expenditure which it is possible to avoid, is inconsistent with the view, which I believe is held by the whole Council, that unless a fixed ratio is established between gold and silver as the result of international agreement (on which we certainly cannot reckon), our financial difficulties must increase. It seems to me unreasonable to urge upon the Secretary of State with one hand, as we are now doing, the dangers imminent to our finances from the fluctuations in the relative value of gold and silver, and with the other to declare our readiness to accept, in the present condition of silver, an accession to our gold risks and obligations on account of interest for railway capital construction. I saw lately that one of the chief London city papers (*The Bullionist*) expressed its astonishment that, while we were unquestionably in serious difficulties, we were adding £6,000,000 this year to our sterling debt on account of railway construction. The writer was doubtless unaware of the causes which have practically made much of our present railway construction compulsory, and of other reasons which led to the raising of that loan ; but the criticism is just, when applied to so much of our railway construction as is optional. Admitting, as the despatch contends, that due regard must be had to general as well as to financial considerations, I think that of late we have been compelled, in spite of ourselves, by the attitude of Russia, and by the course of events in Central Asia, to give for a time to financial considerations less importance than they require. Our great aim should now, in my opinion, be to reconcile, so far as in the present state of silver we may, financial equilibrium with the heavy defence expenditure which has been forced upon us. In that view, and for the reasons stated in the earlier paragraphs of this Minute, I think it necessary to defer, for the time, among other things, the consideration of the Nagpur-Bengal Railway project.

10. The adoption of this policy will no doubt compel us to add temporarily to our expenditure on account of the Nagpur-Bengal metre gauge. I am sorry that we should have to incur expenditure on that account, but I prefer it to the alternative course of giving a guarantee, when our finances are not in assured equilibrium, to the constructors of the proposed Nagpur-Bengal Railway.

11. In regard to the Telegraph Department, I would postpone decision till the prospects of our financial position become more assured.

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Telegram, dated 23rd June 1886.

From—The Secretary of State for India,  
To—Viceroy, Simla.

Yours 16th June last. Bilaspur Railway. I do not understand Colvin's condition. Uncommenced protective lines in scheduled forecast were not to be begun till 1888-89. How does their postponement affect present financial position ?

Telegram, dated 25th June 1886.

From—Viceroy, Simla,

To—The Secretary of State for India.

Your telegram of 23rd June. Colvin's view is that modified Nagpur scheme will not exceed probable additional charge of Rs80,000 this year, Rs1,60,000 next year, and Rs80,000 in 1888-89, or Rs3,20,000 in all; after which receipts will exceed charges, and progressively strengthen revenues. On other hand, cost of inevitable repairs to present metre gauge debitable to revenue, estimated for next two years at over six lakhs. Acceptance of addition to gold obligations during next three years of £1,200,000 therefore admissible, if balanced by corresponding deferment from 1888-89 of additions at present contemplated to such obligations. Refund by Company on account of present railway will assist in furnishing funds for early commencement of Mandalay Railway, construction of which by suspension of railway now in active course of construction would entail financial loss, and is practically impossible.

No. 196, dated 26th June 1886.

From—The Government of India,

To—The Secretary of State for India.

With reference to your telegram, dated the 16th instant, on the subject of the Nagpur-Bengal Railway, we beg to explain that we received through Messrs. Hoare, Miller & Co., of Calcutta, a telegram from Mr. Robert Miller, requesting our concurrence in a modified scheme consisting of the purchase and conversion of the present line, with extension to Bilaspur at once, and the reservation to the Company of a preferential right to extension to Sitarampur hereafter.

2. The financial aspects of this proposal appeared, on examination, to be approximately as follows:—

The total outlay involved would be 295 lakhs (see paragraph 3 of the memorandum accompanying Despatch No. 132 [Financial] of 20th April) *plus* 10 lakhs for store balance,—total 305 lakhs; or £2,160,300, placing exchange at 1s. 5d. per rupee.

The outlay already incurred on the open line, including the Kanhan bridge and cost of exchange, and on the extension to Bilaspur, is estimated at 130 lakhs up to the end of 1886-87; or £920,000. A refund of this amount would at once accrue to the State, subject to a deduction hereafter for metre-gauge materials and stock returned by the Company.

The further outlay necessary would consequently be 175 lakhs, or, say, £1,200,000 in round numbers.

The distribution of this further outlay, and the additional charges and revenue, compared with the net charge for the current year, were estimated as under:—

Year.	Further outlay.	Additional interest.	Additional net revenue.	Additional net charge.
	Rs	Rs	Rs	Rs
1886-87 . . .	40,00,000	80,000	50,000	30,000
1887-88 . . .	1,10,00,000	3,80,000	2,00,000	1,80,000
1888-89 . . .	25,00,000	6,50,000	5,50,000	1,00,000
1889-90 . . .	...	7,00,000	8,50,000	—1,50,000

The line would thus cease to cause any additional charge after the third year.

3. Our five honourable colleagues, General Sir Frederick Roberts, Mr. Ilbert, Sir Stuart Bayley, Sir Theodore Hope, and Colonel Newmarch, who advocated the sanction of the entire railway in our Despatch No. 185 of 19th instant, would have preferred to give an unqualified acceptance to this modified scheme. But their honourable colleague Sir Auckland Colvin, who objects to any increase of obligations in gold at the present time, stipulated, as a condition of his supporting it, that, as an equivalent to the contemplated new obligation, works amounting to 175 lakhs should be selected for postponement to it from among those which are entered in the Forecast appended to Despatch No. 264 (Financial) of 22nd September 1885 but have not yet been commenced, and should only be proceeded with hereafter when, and so far as, compatible with the 3½ million limit to annual outlay. Under the circumstances we all agree to this condition. It is, however, understood that the postponement would be waived in the event of an improvement of the financial situation replacing us in the position we held in April last, before the recent fall in silver.

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Telegram, dated 7th July 1886.

From—The Secretary of State for India,  
To—Viceroy, Simla.

Your telegram of June 16th. Bilaspur Extension. Is a despatch on its way explaining fully Colvin's reasons for agreement? If so, when was it sent?

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Telegram, dated 8th July 1886.

From—Viceroy, Simla,  
To—The Secretary of State for India.

Your telegram of 7th. Bilaspur Extension. We did not think of sending home a despatch because [the] considerations on which Colvin's concurrence was founded, as stated in our telegram of 25th June, did not seem to require lengthened explanation. Main considerations were, firstly, recognised importance of project from famine protection point of view; secondly, postponement of obligations to an equivalent amount on account of construction of other railways at present contemplated; thirdly, favourable financial aspect of proposal; and, fourthly, alternative of considerable outlay in next two years on existing metre-gauge line.

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Telegram, dated 13th July 1886.

From—The Secretary of State for India,  
To—Viceroy, Simla.

After full consideration of the recommendation of your Government, I regret that extension to Bilaspur, however desirable in itself, either by the State or future company, cannot be sanctioned at present in consequence of state of the finances.

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Telegram, dated 22nd July 1886.

From—The Secretary of State for India,  
To—Viceroy, Simla.

Company proposes to purchase Nagpur-Chhattisgarh Railway, and extend (to) Bilaspur (on) Bengal North-Western Railway terms, making works 5' 6" gauge laying way metre-gauge, deferring conversion till dividend 5 per cent. per annum earned. Have you any objection?

Telegram, dated 23rd July 1886.

From—The Secretary of State for India,  
To—Viceroy, Simla.

My telegram of yesterday. Nagpur-Chhattisgarh Railway. What number of rupees should Company pay as from 31st December next for existing line, deducting cost putting into thorough repair, and what for work done on extension ?

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Telegram No. 2175, dated 24th July 1886.

From—Viceroy, Simla,  
To—The Secretary of State for India.

Your telegram of 22nd instant. Nagpur-Chhattisgarh Railway. We are all entirely opposed to continuance and extension of metre gauge, which would practically defer indefinitely the connection of Bilaspur with Umeria and Bengal, and consequent famine protection of Central India, North-Western Provinces, Behar and Orissa ; also the development of eastern portion of Central Provinces with eventual increase of land revenue and the improvement of outlets to Calcutta for produce of Chota-Nagpur and Western Bengal. Proposed measure is thus entirely unsuitable to objects which railway is intended to serve, and to its position relatively to other lines with which it should be connected. Metre gauge is unsuitable for future trunk line to Bengal, and its adoption is certain to be opposed by commercial public.

We all consider entire Nagpur-Bengal project sound and necessary, for reasons given in Despatch No. 132, Financial, dated April 20th, and advocate sanction of whole, provided Bengal and North-Western Railway terms can be obtained<sup>r</sup> which is best solution. Otherwise we adhere to our proposal in our Financial Despatch No. 196, dated 26th June. But any extension beyond Nandgaon should comprise immediate conversion of existing line.

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Telegram No. 2196, dated 26th July 1886.

From—Viceroy, Simla,  
To—The Secretary of State for India.

Your telegram of 23rd instant. Nagpur-Chhattisgarh Railway. Capital outlay on 31st December next 120 lakhs. Cost of thorough repair to be deducted is 12 to 14 lakhs. Outlay Nandgaon to Bilaspur 6 lakhs. Cost to Government of proposed scheme consequently far greater than under guarantee,—see our Financial Despatch No. 196, dated 26th June,—though only metre gauge obtained instead of broad.

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Telegram, dated 30th July 1886.

From—The Secretary of State for India,  
To—Viceroy, Simla.

Negotiations for Nagpur-Chhattisgarh Railway have been suspended. A despatch on the subject will follow.

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No. 215 (Financial), dated 29th July 1886.

From—The Secretary of State for India,  
To—The Government of India.

I have considered in Council the letter from your Government, dated the 19th of June, No. 185, on the subject of the prosecution of the Bengal-Nagpur Railway, forwarding a Minute on the same subject by Sir Auckland Colvin, in whose views

Your Excellency was disposed to coincide. Sir Auckland Colvin deprecates the prosecution of the Bengal-Nagpur Railway under a guarantee, on a consideration of the risks that would arise from an increase of the gold obligations of India in the present condition of silver. The majority of your Council, however, are of opinion that this consideration should not be allowed to interfere with the immediate commencement of the railway, in favour of which they adduce various arguments.

2. From my telegram of the 13th of July, Your Excellency has learned that I have resolved that, in the present state of the finances, even the limited scheme subsequently proposed for the extension to Bilaspur of the existing line cannot be sanctioned, either as a State Railway or as one to be constructed by a Guaranteed Company. A proposal for the construction of the line from Nandgaon to Bilaspur without a guarantee is now under my consideration in the Public Works Department; and on this occasion I desire merely to deal with the points in the letter from your Government, and its enclosures, which bear on the general policy of railway construction at the present time.

3. Sir Auckland Colvin, writing at a moment when exchange stood at about 1s. 5½d. the rupee, and when the demand for bills had almost ceased, and recognising the probability of a financial deficit occurring this year, observed that it was an essential condition of the programme laid down by the Government of India, and one which was endorsed by the Select Committee of the House of Commons, that the proposed extension of railways should not involve additional taxation, or, in other words, that this increased charge should be borne by surplus revenue; and he held that this position was not affected by the contention that for the next five years comparatively small amounts would have to be paid on account of the guarantee for a particular line.

4. The majority of the Council, on the other hand, held the opinion that provision to meet needs which are really essential and pressing, such as that of the protection of important provinces from famine, and of safeguards from military and political dangers on our frontiers, should be proceeded with irrespectively of fall in exchange; and they did not consider that the fact of the liability being incurred in gold should affect such provision. Nor did they consider that, if any new taxation should be found eventually necessary, it could be attributed specifically to one obligation rather than another.

5. I cannot think that these observations weaken the force of Sir Auckland Colvin's argument, that it was an essential condition of the Government of India's programme for the construction of internal railways, not merely that the lines selected should in the long run be profitable, but that their construction should not involve additional taxation, and that the liabilities they created should be met by the surplus revenue. To proceed with fresh lines or extensions of existing lines, at a time when a deficit, which does not arise from temporary causes, is impending, is to court the necessity for further taxation. The amount of such taxation would have to be increased, either in order to pay the interest guaranteed on the capital till the revenues of the line are sufficient to meet the charges, or, if for the present the deficit be met by borrowing, to defray the interest on the loan which will eventually have to be raised for the purpose of meeting it.

6. While I do not in the least overlook the importance of extending the railway system in India, both for the purpose of providing additional means for protecting the country against famine, and for developing its resources, I must impress upon your Government that even these unquestionable advantages may be too dearly bought, if you are compelled, in order to meet your expenditure, to resort to increased taxation.

7. It is most especially needful to incur no new obligations for public works, which are not really unavoidable, at a time when you are committed to a heavy expenditure for the improvement of your north-western frontier communications, which for military and political reasons cannot be postponed, and when, moreover,

it is probable that a large further outlay will be necessary for the construction of railways in Burma. Measures which seemed highly desirable when there was a fair prospect of a surplus of revenue over expenditure, must be suspended in the changed condition that has arisen; and I entirely concur in Sir Auckland Colvin's opinion, that "our great aim should now be to reconcile, as far as in the present state of silver we may, financial equilibrium with the heavy defence expenditure which has been forced upon us."

8. I cannot accept the view stated in the 4th paragraph of the letter, that the fall in exchange has practically had no effect on the financial prospects of the scheme, and may be discarded. As Sir Auckland Colvin observes, it is not merely the fall which has already occurred that constitutes the difficulty, but the instability of the value of the rupee, and the further fall which there is too much reason to fear may be anticipated. A sterling guarantee given a few years ago, which, if exchange had not fallen, would have been discharged by net earnings equal to 4 per cent. on the capital-outlay, even now requires more than  $4\frac{1}{2}$  per cent. of net earnings to meet it, and it seems not unlikely that the percentage may be further increased; and this would happen simultaneously with a corresponding increase of the charge arising from all the other remittances to meet Home expenditure.

9. That the exchange should be, as is argued in paragraph 8, artificially kept up by borrowing two or three millions of money now, to meet part of the year's expenditure in England, the drawings being reduced in a corresponding degree, is a suggestion which, in my opinion, is, in the actual circumstances, wholly opposed to true economy. Some of the pressure would, no doubt, be removed for the moment, at the cost, however, of enhancing the amount of bills to be sold in future years, when, so far as it is possible now to anticipate, the difficulties of remittance are likely to be still further increased.

10. Finally, in regard to the statement in the 16th paragraph, that a new source whence to meet such obligations as those involved in the construction of the Bengal-Nagpur Railway has lately been provided in the Famine Insurance grant, it is necessary, first, to remark that this resource is simply drawn from the revenues, and with the failure of the surplus may wholly disappear. But further, with reference to such an application of the grant as that to which you refer, I must draw Your Excellency's attention to the concluding paragraphs of Lord Randolph Churchill's Despatch of the 10th of December 1885, No. 367, in which he said that whatever arrangement might be made respecting the method of charging in the accounts the interest guaranteed to a Railway Company, the Famine Insurance grant was not to be regarded as a fund to which resort might be legitimately had for the payment of interest on any large or novel Public Works expenditure.

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No. 79 Ry., dated 2nd September 1886.

From—The Secretary of State for India,

To—The Government of India.

The telegrams noted in the margin, which have passed between Your Excel-

Telegram to	Viceroy,	21st May 1886.
Ditto from	ditto,	29th May 1886.
Ditto from	ditto,	3rd June 1886.
Ditto from	ditto,	18th June 1886.
Ditto to	ditto,	22nd June 1886.
Ditto from	ditto,	25th June 1886.
Ditto to	ditto,	7th July 1886.
Ditto from	ditto,	8th July 1886.
Ditto to	ditto,	13th July 1886.
Ditto to	ditto,	22nd July 1886.
Ditto to	ditto,	23rd July 1886.
Ditto from	ditto,	24th July 1886.
Ditto from	ditto,	26th July 1886.
Ditto to	ditto,	30th July 1886.

lency and my predecessor, will have kept your Government acquainted with the different phases in which the question of the Nagpur-Bengal Railway has been presented for consideration during the last three months.

2. You will also have learnt by the telegram of the 30th July that negotiations with the promoters of a company for undertaking the line had been suspended for the present, and I take the

opportunity of furnishing Your Excellency, in the meantime, with fuller information than the telegrams could have given you of the proceedings which have taken place on the subject.

3. In the letter from your Government, No. 132, in the Department of Finance and Commerce, dated the 20th April last, you strongly urged that concessions should be given to a company, based on the terms granted to the Indian Midland Company, for undertaking the line in question, and expressed the hope that the reasons given in support of this recommendation would induce my predecessor to consider the decision which he had come to in Council, *viz.*, that the present was not a convenient time for the prosecution of the scheme.

4. A further consideration of the subject, in compliance with Your Excellency's request, led my predecessor to transmit to you his telegram of the 21st May, the reply to which showed that, while certain members of your Government continued to advocate the immediate commencement of the line in question, the Financial Member, supported by Your Excellency, was of opinion that it should be postponed for the present, on the ground explained in your telegram of the 29th May. When the matter was in this position, a further proposal was made that the project should be limited for the present to the extension of the existing line to Bilaspur, a distance of only 100 miles—a work which, according to your latest estimates, would, together with that of converting the line from Nagpur to Nandgaon to the 5' 6" gauge, involve an expenditure of from 180 to 200 lakhs.

5. This proposal received the unanimous support of your Government, but it was, after much consideration, decided by Lord Kimberley in Council that the extension of the railway to Bilaspur, however desirable in itself, either by the State or a Guaranteed Company, could not be sanctioned at present, and the telegram of the 13th July was accordingly despatched to Your Excellency.

6. In communicating this decision to the promoters of the Company, they were informed that, if they should be prepared to submit proposals which did not involve the grant of a guarantee, such proposals would receive early attention.

7. In response to this invitation, the promoters of the Company expressed their readiness to make the attempt to launch the limited project on the basis of the terms given to the Bengal and North-Western Railway. When negotiations were commenced on this new footing, and the latest information which had been received from your Government regarding the cost and earnings of the open line, and the estimated outlay on the extension, had been placed before the promoters, they enquired whether they might postpone the conversion of the present line to the 5' 6" gauge, and in the first instance construct the extension to Bilaspur with works in all respects suitable for the 5' 6" gauge, but lay the rails for metre gauge, and that the whole length should be allowed to remain in this condition until the Company had earned 5 per cent. on the capital raised by them.

8. The promoters were of opinion that with the large outlay that would have been required in the event of immediate conversion, the dividend from the probable receipts would be so reduced during the first few years as to deter the public from subscribing the capital. They therefore deemed it desirable that they should be able to prove the remunerative character of the railway before incurring the expense of altering the gauge of the existing line. Your Government, having been asked by a telegram, dated 22nd July, whether you would assent to such an arrangement, expressed your disapproval of the proposal. But as it is possible that you may not have distinctly understood it, owing to the necessarily condensed terms of the telegram, I have explained the reason and object of the arrangement more fully, and request that I may be again favoured with your opinion on the subject by letter.

9. Before Messrs. Miller & Co. had been informed of the views of your Government on this point, they had come to the conclusion that the season was too far advanced to lead them to hope that a company could be successfully launched at the present time; but if they are to make the attempt later in the year without



the guarantee of interest, it would be desirable that every reasonable encouragement should be given to them, and I should be glad to learn that your Government were not averse, under the circumstances, to allow the adoption of the 5' 6" gauge to be kept in abeyance until such time as the receipts from the new line gave a sufficient financial basis for raising the further capital requisite for the conversion, which the company should engage to undertake as soon as that result was attained, or, if they declined to carry it out, the Government should be placed in a position to obtain possession of the work, &c., constructed by the company, at cost price.

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*Extract from a letter, No. 148 Ry., from the Government of India, to Secretary of State for India, dated 29th September 1886.*

Para. 17. With reference to the construction of the line by State agency, we have very carefully considered the suggestion, made in paragraph 51 of Lord Kimberley's Despatch No. 216 (Financial), dated the 29th July last, that the funds "should, if possible, be found by the postponement of operations on other lines of railway, or of some other expenditure not equally urgent." We do not think it would be desirable in the interest of economy to stop the construction either of the Famine lines in active progress or of the Frontier lines now rapidly approaching completion. On the other hand, it is necessary for political reasons to complete with the least possible delay the scheme of Frontier and Coast Defence works at present in hand, the urgency of which is not, we believe, called into question.

It is not, therefore, possible to find the necessary funds by the postponement of operations on other lines of railway, or of some other expenditure not equally urgent. At the same time, we are fully aware of the objections to increasing, in the present financial situation, the amount of our obligations, and especially of our annual borrowing in the market. We are on the whole of opinion that the least objectionable method of providing ourselves in these circumstances with the necessary funds will be to carry out, on the conditions proposed in our Despatch No. 196, dated 26th June 1886, the negotiations at present in suspense for the prosecution of the Nagpur-Bengal Railway scheme. The term might be "Indian Midland," "Bengal and North-Western," or such as Your Lordship may, under the circumstances, deem preferable. The concession would provide us with a refund amounting to about 111 lakhs of rupees, which will, we calculate, with other resources at our command available to meet any small possible excess, enable us to meet all demands for the Mandalay Extension up to the close of 1887-88. By that time the Famine and Frontier railways now in hand will have been completed, and the question of the mode of supplying funds necessary for the completion of this extension in 1888-89 can be considered in the light of the circumstances of the time, without prejudice to the prosecution of railways in course of completion, such as at present make the question of provision of funds more embarrassing to deal with. It is not to be denied that we shall, under the plan which we propose, add to our obligations in the ensuing year by the amount of the refund anticipated. The necessity, however, in which we believe ourselves placed, of bringing to completion without waste the works on which we are actually engaged and at the same time of carrying out, without increasing the amount of our annual loan operations, the project, the urgent need of which forms the subject of this despatch, seem to us, in the present instance, to justify the course which we propose. It may be added that the scheme which we now put forward for Your Lordship's acceptance will enable us to carry to early completion a section of the Bengal-Nagpur project which is likely to be very remunerative, and which, as shown in our Despatch No. 132, dated 20th April 1886, will not impose on our finances during construction a burden in excess of that which otherwise must fall on them, for repair of the present narrow-gauge line, should that line be maintained.

No. 155, dated the 4th October 1886.

From—The Government of India,  
To—The Secretary of State for India.

We have had the honour to receive Your Lordship's Railway Despatch No. 79, dated the 2nd ultimo,

Telegram, dated 22nd July 1886.

From—Secretary of State for India,  
To—Viceroy, Simla.

Company proposes to purchase Nagpur-Chhattisgarh Railway, and extend to Bilaspur on Bengal and North-Western terms, making works 5' 6" gauge, laying way metre-gauge, deferring conversion till dividend 5 per cent. per annum earned. Have you any objection?

Telegram, dated 24th July 1886.

From—Viceroy, Simla.  
To—Secretary of State for India.

Your telegram of 22nd instant—Nagpur-Chhattisgarh Railway. We are all entirely opposed to continuance and extension of metre gauge, which would practically defer indefinitely the connection of Bilaspur with Umari and Bengal, and consequent opening of Central India, North-Western Province, and also the development of eastern portion of Central India, with eventual increase of land revenue and the improvement of outlets of Calcutta for produce of Chota-Nagpur and Western Bengal. Proposed measure is thus entirely unsuitable to objects which railway is intended to serve, and to its position relatively to other lines with which it should be connected. Metre gauge is unsuitable for future trunk line to Bengal, and its adoption is certain to be opposed by commercial public.

We all consider Nagpur-Bengal project sound and necessary, for reasons given in Despatch No. 132 (Financial), dated April 20th, and advocate sanction of whole, provided Bengal and North-West Railway terms can be obtained, which is best solution. Otherwise we adhere to our proposal in our Financial Despatch No. 196, dated 26th June. But any extension beyond Nandgaon should comprise immediate conversion of existing line.

Telegram, dated 23rd July 1886.

From—Secretary of State for India,  
To—Viceroy, Simla.

My telegram of yesterday—Nagpur-Chhattisgarh Railway. What number of rupees should Company pay us from 31st December next for existing line, deducting cost putting into thorough repair, and what for work done on extension?

Telegram, dated 26th July 1886.

From—Viceroy, Simla,  
To—Secretary of State for India.

Your Lordship's telegram, dated 23rd instant—Nagpur-Chhattisgarh Railway. Capital outlay on 31st December next 120 lakhs, cost of thorough repair to be deducted is 12 to 14 lakhs. Outlay Nandgaon to Bilaspur, six lakhs. Cost to Government of proposed scheme consequently far greater than under guarantee (see our Financial Despatch No. 196, dated 26th June), though only metre gauge obtained instead of broad.

Telegram, dated 30th July 1886.

From—Secretary of State for India,  
To—Viceroy, Simla.

Negotiations for Nagpur-Chhattisgarh Railway have been suspended. A despatch on the subject will follow.

the grounds for those opinions, and this we now beg to submit.

3. We need not refer in detail to the correspondence of the past five years in order to explain that the principal ground on which the Government of India have advocated the construction of the Nagpur-Bengal Railway has been its famine protective value. A *résumé* will be found in the first paragraph of the third

in which an explanation is given of the reason and object of the arrangement for extending the Nagpur-Chhattisgarh Railway to Bilaspur on the metre gauge, regarding which the telegraphic correspondence quoted marginally took place in July last, and it is requested that, as we may not have distinctly understood the arrangement owing to the necessarily condensed terms of the telegram, we will again express our opinion by letter.

2. We may state, at the outset, that the explanation with which we are now favoured does not differ in any material particular from the outlines of the arrangement conveyed in the telegram of July 22nd, or modify the opinions unfavourable to it which were expressed in our telegrams of the 24th and 26th idem. Your Lordship will no doubt desire, however, to receive from us a fuller exposition of

enclosure to our Despatch No 132 (Finance and Commerce), dated 20th April last. In September 1885 we termed this line "the backbone of our whole protective system." Paragraph 42 of our Despatch No. 132 (Railway), dated 18th August 1883, gives the following explanation of this statement:—

"Supposing the line now under consideration to be constructed, the whole resources (vastly increased) of the tract referred to will be available at either end for famine relief of Behar and Bengal on the one hand, and of Western and South India on the other. Moreover, the addition hereafter of a branch to Cuttack will render impossible in Orissa a disaster such as that of 1869, while the connection of Bilaspur with Bundelkhand and Northern India will be a most important safeguard against famine in that quarter."

It is evident that if the Nagpur-Bengal Railway be commenced on the broad gauge, by conversion of the existing line and extension on that gauge to Bilaspur, its continuation to Sitarampur in Bengal could be taken in hand at any moment when financial circumstances allowed, and the full benefit of each section of the extension eastward, as they were successively opened, would be secured by the continuity of gauge in the rear to Bombay. The connection between Bilaspur and the broad-gauge line at Umaria, and the branch to Cuttack and Pooree, could be similarly proceeded with at once, whenever the occasion permitted.

But to these essential protective extensions, a line to Bilaspur on the metre gauge would constitute a formidable obstacle. However favourable might be the opportunities for starting them, the conversion of the 259 miles between Nagpur and Bilaspur would be an indispensable condition precedent. But the Company could not, under the proposed arrangement, be called on to begin it until their own undertaking had reached a certain specified remunerativeness; when so called on, time would be consumed in preliminaries, a favourable occasion in the money market would be necessary, and the conversion itself would occupy a considerable period. In the meantime, the favourable opportunities for the extensions might have passed away; in any case, a very considerable delay would have been interposed.

4. Although famine protective in its origin and primary object, the Nagpur-Bengal Railway has also been recognised throughout as remunerative, or technically "productive" in its financial aspect. This point is also brought out in the *résumé* already referred to (paragraphs 2 to 4), and in the despatch to which it is an enclosure. To the Government, the principal advantages are the opening up of the now completely isolated and landlocked eastern tracts of the Central Provinces, with consequent increase of land revenue, and the larger net earnings which must accrue to the Great Indian Peninsula and the East Indian Railways by the new traffic from those tracts, as also from Chota-Nagpur and Western Bengal, which will be poured upon them. To the commercial public, the value of this anticipated traffic is attested by the frequent representations from the Chambers of Commerce at Calcutta and Bombay, which we have from time to time submitted to Your Lordship. These advantages—and such of them as will accrue to ourselves we can ill spare—will necessarily be at least postponed, as explained in the preceding paragraph, by the obstacle which a metre-gauge line to Bilaspur would interpose.

5. The preceding remarks will explain the opinion expressed in our telegram of the 24th July, that the proposed measure, which would conduct a railway on the metre gauge to Bilaspur, is entirely unsuitable to the objects (protective, commercial, and financial) which the Nagpur-Bengal Railway is intended to serve, and also to its position relatively to other lines with which it should be connected—lines all upon the broad gauge. In fact, that measure would have to be undone, and the step taken to be retracted, at the cost of unnecessary delay and expense, before any of those objects could be attained, or the connection with other lines which they postulate could be suitably effected.

6. We may next explain the anticipation, also stated in our telegram, that the

measure would "practically defer indefinitely" the extensions beyond Bilaspur, and their consequent advantages—

- (a) In the first place, although fully recognising the special remunerativeness of the section of the Nagpur-Bengal Railway project which lies between Nagpur and Bilaspur, we should hesitate to predicate a definite period within which a metre-gauge line extending throughout that section, but weighted with the cost of broad-gauge works for two fifths of the whole length, and with very heavy outlay for repairs of the remainder and enlarged workshops for the whole, as also impeded at its outlet by the break of gauge at Nagpur, would return 5 per cent. on the capital. Moreover, such a return for a single half-year, or even year, could probably not be supported as sufficient to warrant the enforcement of the condition in the Company's contract to raise the further capital for conversion when that percentage of earnings had been attained.
- (b) But supposing such earnings to have been admittedly attained, it seems doubtful whether the Company would willingly comply with the condition, or the Government be either willing or able to compel them to do so. The Company, in possession of an undertaking yielding so profitable a return as 5 per cent., would naturally be very reluctant to "water down" their capital by the large addition necessary for the conversion, and to suffer the heavy fall which must, for the time at least, occur in the market value of their shares.

The Company would also lose in the conversion much of the heavy expenditure which they would have incurred for putting the existing line in order, enlarging the workshops, &c. The Government, on the other hand, would have then to take over from the Company on the conversion a much larger quantity of metre-gauge permanent-way, stock, &c., than if the conversion were made at once, and might find a difficulty in disposing of it which would not, we have reason to believe, arise in the latter case. Moreover, if, notwithstanding these difficulties on both sides, which it would be impossible to ignore, the Government decided to enforce the contract, and the Company chose to incur the penalty suggested of surrender of the works, &c., constructed by the Company, at cost price, the former would be in a worse position still, and as far off conversion and extension as ever, since no new Company would be likely to take the line over except at a heavy allowance for depreciation of works, or to embark on those operations without a guarantee.

Under these contingencies of two different classes, we consider that the conversion and extension beyond Bilaspur would practically be deferred indefinitely, if indeed the expectation now held out, that they would be merely kept in abeyance, did not prove illusory altogether.

7. The risk that the expectation referred to might prove illusory would obviously arise from the temptation to both parties to dispense with conversion, and to extend from Bilaspur to Sitarampur and elsewhere upon the metre gauge. The Company would thereby secure a highly remunerative property without complying with the condition under which alone it had been conceded to them, while the Government would be relieved of the large amount of metre-gauge way and stock otherwise thrown upon their hands, and of the dilemma as to the enforcement of that condition which has been explained in the preceding paragraph.

Upon the numerous evils which the adoption of metre gauge for the extensions would create—the double break in through communication, the single break and change of vehicles imposed on all exports and on grain for famine relief, the loss of carrying power and economy in working, &c.—we deem it unnecessary to dilate. The subject was fully dealt with in paragraphs 18 to 20 of our Despatch No. 132 (Railway) of 18th August 1883; the necessity of broad gauge for trunk lines was laid down by the Parliamentary Committee of 1884; and the adoption of that gauge for the Nagpur-Bengal Railway has been specifically sanctioned by the

Secretary of State. In our telegram of July 24th, we stated that "metre gauge [is] unsuitable for future trunk lines to Bengal, and its adoption is certain to be opposed by commercial public," and we are unable to assent to any measure which involves even the contingency of its being resorted to.

8. We will now proceed to examine more closely the financial aspect of the proposed arrangement as indicated in Lord Kimberley's two telegrams and the despatch now under reply.

The capital outlay on the existing line, including loss by exchange, is 120 lakhs; that on the extension to Bilaspur 6 lakhs: total 122 lakhs. The cost of putting into thorough repair is estimated at 12 to 14—probably 14—lakhs. Deducting the cost from the total outlay as contemplated in the telegram of July 23rd, and already proposed to the Company, the amount which the latter would have to pay to the Government would be 112 lakhs. They would also have themselves to place the line in thorough repair and also to enlarge the present workshops, &c., for which at least the 14 lakhs would be required. The cost of the extension to Bilaspur of 109½ miles\* would be 120 lakhs for broad gauge, so perhaps 20 lakhs less should be allowed for only metre-gauge rails and stock to be at first supplied for the broad-gauge works according to the arrangement. Probably 10 lakhs would be required for interest during construction, and a further sum, say 5 lakhs, for returns below the rate at which the capital was raised pending development of the traffic. The Company would thus have to raise 241 lakhs at the outset. Assuming the receipts, when the traffic was developed, to be Rs 190 per mile per week, as on the present metre-gauge lines, and the working expenses to be 55 per cent, then the return on the capital would be 4·78 per cent.

The doubt expressed in clause (a) of our paragraph 6 above is thus so far confirmed. But it is obvious that while, on the one hand, the longer the receipts took to attain the postulated 5 per cent., the more would the desired conversion and extension be deferred; on the other, the sooner they reached it the more unnecessary would the proposed arrangement for postponed conversion and metre-gauge extension be proved to have been.

In any case, the Government would have, by the latter, sacrificed 14 lakhs of its capital outlay on the existing line, and the Company would have sunk another somewhat similar sum in metre-gauge repairs, &c., which would for the most part become unremunerative whenever the conversion took place.

9. We observe that the scheme for deferring the expense of altering the gauge of the existing line, until the remunerative character of the railway shall have been proved, is stated, in the 8th paragraph of the despatch under reply, to be founded on an opinion of the promoters that, "with the large outlay that would have been required in the event of immediate conversion, the dividend from the probable receipts would be so reduced during the first few years as to deter the public from subscribing the capital."

There can be no doubt, we presume, that the entire Nagpur-Bengal scheme by which the cost of conversion would be distributed over the whole 625 miles comprised in it, instead of being thrown entirely in the first instance upon the 259 miles of the Nagpur-Bilaspur section alone, while the latter section would rapidly benefit from traffic contributed by the lines beyond, affords a broader basis for permanent remunerativeness, and should be more attractive to the public, than the modified scheme, limited to immediate conversion and extension to Bilaspur, with extensions beyond in the future. At the same time, the latter scheme, provided that the prospect of extension were not left altogether indefinite, does not seem to be so radically different from what the promoters have all along desired as to justify their hesitation in embarking on it. We cannot but apprehend that they may not be possessed with a full acquaintance with the facts. We append a memorandum, prepared in our Public Works Department, which shows, in amplifi-

cation of our Despatch No. 196 of 26th June last, that under this modified scheme the Company would have to raise a capital of 290 lakhs, and that a return of fully 4 per cent. may be anticipated from the outset, even on an estimate of gross receipts which is extremely cautious for a broad-gauge line, in a locality where the success of railway communication has already been established. We are not aware that the Bengal and North-Western Railway started under expectations better and more trustworthy than these. It may be added that under this scheme both the sacrifices alluded to at the close of the preceding paragraph would be avoided.

10. In view of the above calculations, we think that the promoters need not hesitate to embark in the project for immediate conversion and extension to Bilaspur on "Bengal and North-Western terms" (as they now stand), but that they would succeed as well if not better with the public by undertaking the entire Nagpur-Bengal scheme on those terms, as suggested in our telegram of 24th July last. We trust that on learning the present full exposition of the case, which Your Lordship will no doubt cause to be explained to them, they will consent to adopt either one or other of these courses.

11. In the event, however, of their not so consenting, then the only alternative which we deem justifiable is that of giving a guarantee to the modified conversion and extension scheme, as set forth in our Financial Despatch No. 196 and our telegram of 24th, and as lately submitted for Your Lordship's reconsideration in paragraph 17 of our Railway Despatch No. 148 of the 20th September 1886, with special reference to the facilities afforded for the prosecution of the Mandalay Railway by the refund which would accrue.

In the consideration of this alternative, we would especially commend to Your Lordship's notice the fact that, if no concession at all be made at present to the Company, we must speedily expend, as shown in paragraph 4 (c) of our Despatch No. 132 of 20th April 1886, some 6 or 7 lakhs on placing the existing line in a state of repair compatible with safety and convenience of the public; while, if the arrangement for carrying the metre gauge to Bilaspur, and holding conversion in abeyance, be carried out, no less than about 14 lakhs must be surrendered by the State on account of thorough repairs. Rather than incur the outlay thus inevitable, in one case or the other, we submit that it would be preferable to do away with its

"It has been my duty to explain to Your Excellency the circumstances under which my predecessor felt himself unable to sanction the prosecution of the Nagpur-Bengal Railway, even to the limited extent recently proposed; and there would be no justification for allowing the scheme now under notice to be proceeded with, unless it were the means of substituting for an outlay which is inevitable, an expenditure which would fulfil the object of such outlay, and at the same time be more useful and remunerative."

necessity by substituting the lesser cost of a guarantee, which would at the same time secure the more useful and remunerative object of broad-gauge communication with Bilaspur, and its easy extension beyond hereafter. This view appears, we may point out, to be in entire accordance with the reasoning set forth in the remarks quoted marginally, contained in Your Lordship's, Railway Despatch No.

76, dated the 2nd ultimo, on the subject of the Godra-Rutlam line.

12. In conclusion, we would point out that the possibility of a rise in the exchange enhances the desirability of raising of the capital at the earliest practicable date.

#### *Memorandum.*

Mr. Cregeen's estimates for the conversion of the Nagpur-Chhattisgarh line, which form enclosures to Despatch to the Secretary of State, No. 89 Ry., dated 11th June 1886, amount to—

	R
	73,66,974
Deduct Kanhan Bridge already provided . . . . .	7,59,608
	<hr/>
	66,07,366
	R

but in arriving at this figure a credit has been taken for the following items (metre gauge) :—

	R
Rails, &c. . . . .	6,11,551
Points and crossings . . . . .	26,220
Rolling-stock . . . . .	13,72,608
<b>TOTAL .</b>	<b><u>20,10,379</u></b>

Leaving this credit for the present out of consideration, the real amount of the estimate becomes R86,17,725.

On going over the various items of the estimate, the only conclusion to be arrived at is that, in consequence of the fall of exchange to, say, 1s. 5d., the estimate should, notwithstanding a fall in the price of steel, be increased to about R90,50,000.

2. The estimated expenditure on the existing line (including stores in hand and at the Kahan Bridge) to close of December 1886 is about R1,20,00,000. If Government converted the line, therefore, the total book debit to capital would be  $120 + 90\frac{1}{2} = 210\frac{1}{2}$  lakhs. This includes expenditure on rolling-stock and metre-gauge material to the extent of about R40 lakhs (this is an approximation, as no ready means are at hand of ascertaining the exact figure) : and as this will be eventually useless to the new line, it might be thought desirable to reduce the capital value to R210½ lakhs—R40=R170½ lakhs.

But as the metre-gauge material, &c., will be required for at least a year, it would be well to leave it until no longer required at the debit of the capital account, though, should the line be made over to a company, a deduction of R15 lakhs for depreciation might reasonably be made.

3. This would make the capital to be raised by the company for the purchase and conversion, and for the further extension to Bilaspur R210½ lakhs—R15 + R120=R315½. As soon as the metre-gauge stock and material was no longer required, the company would receive a refund of the 25 lakhs, thus making the total of the capital of Nagpur-Bilaspur line on which interest will be payable to the company, R170½ lakhs + R120=R290½ lakhs.

Loss of interest during the construction of the existing line has been excluded from the calculation, as well as the indirect establishment charges in the matter of leave and pension allowances. Interest during construction of the extension, and while its traffic was developing, has also not been taken into account.

4. Notwithstanding the loss by conversion this figure is not unreasonable for a line 25 miles in length, more especially when the fact is considered that the success of railway communication in these parts has already been established, and that the great progress already made will lead to an earlier realisation of surplus profits.

5. If a company can be started on this basis, the immediate cash refund to Government will be R105\* lakhs for the Nagpur-Nandgaon section + R6 lakhs for the Bilaspur section ; in all R111 lakhs, which will provide amply for the prosecution of the Mandalay Railway in 1887-88.

There will remain at the debit of Government an unproductive capital of R15 lakhs + any further sum by which the eventual realisation on account of the metre-gauge material falls short of the 25 lakhs allowed to the company. This it appears impossible to avoid.

6. The return which this capital may be reasonably expected to yield is the next point.

When it is considered that in the last year the Nizam's Railway earned nearly R180 per mile per week, and the Great Indian Peninsula over R460, it would not apparently be an exaggerated estimate to place the earnings of the Nagpur-Bilaspur line at R200 (as a metre gauge it earned last year R190). This for an open mileage of 259 miles would give gross earnings of R26,93,600.

The working expenses on the Nizam's line, which is only 120 miles long, are only 56 per cent. of gross earnings; on the Great Indian Peninsula they are 50·46.

With working expenses at 50 per cent. of gross earnings, the net earning Rs13,46,800, would represent a dividend of 4·63 per cent. on the capital of 290½ lakhs. But even if the rate were taken at 55 per cent., which seems unnecessarily high, the return would still be 4·17 per cent.

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Telegram, dated 4th October 1886.

From—Viceroy, Simla,

To—Secretary of State for India, London.

Your Railway Despatch No. 79, dated 2nd September. Despatch has been posted to-day. Full explanation of reasons for objecting to deferred conversion of Nagpur-Chhatisgarh Railway and metre-gauge extension to Bilaspur, and unanimously reiterating recommendations contained in our telegram dated 24th July, and paragraph 17 of our Railway Despatch No. 148, dated 20th September last.

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Telegram, dated 28th December 1886.

From—Viceroy, Calcutta,

To—Secretary of State for India, London.

Your despatch—Mandalay Railway. We are anxious to know whether negotiations have been concluded with promoters Nagpur-Bengal Railway. We unanimously recommend coming to final terms with them on such reasonable terms as may be ascertained to be most likely to be favourably received by the money market. See our telegram of 2nd January last and paragraph 17 of our Railway Despatch No. 148, dated 20th September last.

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Telegram, dated 25th February 1887.

From—Secretary of State for India, London,

To—Viceroy, Calcutta.

Nagpur Railway Company has been formed and capital subscribed for.

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No. 36 (Railway), dated 24th March 1887.

From—The Secretary of State for India,

To—The Government of India.

Your letters noted in the margin have been before me in Council while the

*Formation of the Bengal-Nagpur Railway Company.*

Railway letters Nos. 147 and 155 of 20th September and 4th October 1886.

question of the Bengal-Nagpur Railway has been under consideration.

2. The telegrams which have passed will have kept Your Excellency informed of the course which the negotiations with the promoters of the scheme took, of the ultimate formation of a Company, and of the issue of three millions of share capital on terms similar to those granted to the Indian Midland Railway Company.

3. You will observe by the letter addressed to Mr. Miller on the 4th February 1887, that the Company were required to pay in 750,000*l.* within 6 months, and a further sum of not less than 1,000,000*l.* before the 31st March 1888. They have, however, already paid in 1,581,996*l.*

4. I forward herewith copies of the contract which has been entered into with the Company, the name of which is the "Bengal-Nagpur Railway Company." The provisions of the Indian Midland Railway contract have been generally



followed. The only practical difference is in respect (1) of the conditions relating to the existing Nagpur-Chhatisgarh and the Katni-Umaria Railways, and (2) of the advance by the Secretary of State, under clause 38, of further capital at his option.

5. With regard to the Nagpur-Chhatisgarh metre-gauge line, which will at once be taken over and worked by the Company, and which they engage to convert to the 5' 6" gauge when required so to do, you will, no doubt, have already made arrangements for transferring it to the Company forthwith. The question as to the time and manner of its conversion to the 5' 6" gauge will require careful consideration in relation to the extension of the line to Bilaspur and Umaria, and will receive the immediate attention of the Board, in communication with their Engineers, and the result of their deliberations will be submitted to you. As regards the transfer of the Katni-Umaria section, you will observe that under Section 3 of the contract the Secretary of State has power to call on the Company to take it over "on or before the date of the opening for public traffic of the branch from Bilaspur to Umaria." It will therefore be for your Government to consider whether it would be expedient to place it in the hands of the Company, and, if so, whether it should be done at once or at some future period, and whether any special conditions should be made with reference to any possible coal traffic. The decision on this matter may, in some measure, depend upon the time when the prosecution of the line to Bilaspur is proceeded with, and on the conclusion whether, in view of the importance of the line as opening a direct communication with the North-Western Provinces, operations upon it may not advantageously be commenced from Umaria. The Company is bound to follow the instructions of the Secretary of State on these points, and I shall be glad to receive your views upon them.

6. With respect to the provision of further capital beyond the 3,000,000*l.*, it would be premature, at the present time, to discuss the mode in which it shall be obtained. It is sufficient to say that the question of obtaining powers from Parliament to raise money for railway purposes in the manner explained in my predecessor's Despatch No. 191, in the Financial Department, dated the 8th July last, remains under consideration.

7. It is scarcely necessary to direct Your Excellency's attention to any particular clauses of the contract. The provisions are, as I have already said, similar to those in the Indian Midland contract. The same powers of supervision and control are reserved to the Government both in this country and in India, and the Company are under the same obligations to follow the directions that may be given to them in regard to the construction and working of the railway. The system of accounts and the mode of applying the receipts of the railway are also the same. Under the last-mentioned condition, the net earnings of the existing line will be applicable, in the first place, to the payment of the guaranteed interest.

8. It only remains for me to remind Your Excellency that you will have to decide, at an early date, where the headquarters of the Company shall be, and that you will also soon have to consider how the operations of the Company shall be carried on. In your telegram of the 28th February, Your Excellency enquired whether the immediate "commencement of work at both ends" was contemplated, and I informed you, in reply, that the Company were not bound to do so, but that they would have to "act according to instructions from the Secretary of State." Work could, of course, be commenced at three points, if thought desirable,—*viz.*, at Nandgaon, the terminus of the open Chhatisgarh line, at Sitarampur or wherever the junction with the East Indian Railway may be fixed, and at Umaria. It is desirable that I should be informed of Your Excellency's views on these points, so that the needful consideration may be given to the financial bearing of any proposed plan of operations, and an early decision come to.

9. The attention of your Government has already been drawn to the question of

the junction between the projected railway and the East Indian Railway by Lord Kimberley's Despatch No. 57 (Railway), of the 10th June last, and by the memorandum of the Agent of the East Indian Railway Company, dated the 18th January 1887. It is a matter which will require very careful consideration, and it seems to be not improbable that a re-survey of a considerable length of that part of the new line which lies between Bisalpur and Sitarampur will be necessary before a satisfactory conclusion can be arrived at. The early attention of the Directors will no doubt be given to the subject, and your Government shall be duly informed of their views.

No. 120 (Railway), dated 24th June 1887.

From—The Government of India.

To—The Secretary of State for India.

We have the honour to acknowledge the receipt of Your Lordship's Despatch No. 36 (Railway), dated 24th March last, relating to the Bengal-Nagpur Railway, and to submit the following report on the subject.

2. The Nagpur-Chhattisgarh metre-gauge line was formally handed over to Mr. T. R. Wynne, the Company's Agent and Chief Engineer, on the 9th ultimo. Arrangements have been made for considering the line to have been worked on the Company's behalf from 1st April, as directed in Your Lordship's telegram, 30th March last.

All necessary papers relating to the whole of the Company's undertaking have been supplied to Mr. Wynne, as requested in Your Lordship's telegram of 25th April.

3. Upon learning from Your Lordship that the undertaking had been conceded to the Company, we instructed Colonel Wallace, R.E., our Consulting Engineer, to whom the future supervision of the line would fall, to proceed to the Central Provinces for the purpose of visiting the open line and the extension works to Raipur, and conferring with the local authorities, and to report upon the most convenient and advantageous programme to adopt for the prosecution of works from the Nagpur end. On receiving from Mr. Wynne a copy of his Board's instructions, No. 1, dated 12th April, we referred for the opinion of the Chief Commissioner, Central Provinces, the suggestion in the Board's 10th paragraph for a direct route between Raipur and the Tedi Maun river *via* Loan, in lieu of that *via* Bilaspur or its neighbourhood, which the Government of India have approved. We also invited Mr. Wynne to visit Simla, as soon as he had made all necessary local enquiries and arrangements, with the view of discussing the various pending questions relating to establishment and operations.

We now append copies of reports by Colonel Wallace and the Chief Commissioner, Central Provinces, in reply to the references above specified, and a copy of the proceedings of a Conference which has taken place with Mr. Wynne, and proceed to notice the more important points which have arisen or been disposed of.

4. Owing to an unfortunate accident, Your Lordship's telegram of April 6th, sanctioning resumption of operations on the Nandgaon-Raipur section, did not reach our Public Works Department until 5th of May, but construction was promptly put in hand by Mr. Wynne after he had visited Raipur.

In pursuance of the telegrams quoted marginally, Mr. Wynne has also made

**Government of India to Secretary of State, dated 9th April 1887.**

<sup>39</sup> Secretary of State to Government of India, dated 25th 1887.  
<sup>39</sup> 7th May 1887.

Secretary of State to Government of India, dated 7th May 1887.  
Government of India to Secretary of State, dated 9th .. 1887.

Government of India to Secretary of State, dated 27th	1887.
Secretary of State to Government of India, dated 27th	1887.

Secretary of State to Government of India,	„	30th	„	1887.
Government of India to Secretary of State.	„	31st	„	1887.

Secretary of State to Government of India, „ 4th June 1887.

arrangements for proceeding with the earth-works, &c., necessary for the conversion of the open line. With reference

to this measure we concur in the opinion of Colonel Wallace.

5. Regarding the route to be followed between Raipur and Raigarh, we are entirely in accord with the Chief Commissioner, Central Provinces, that the substitution of a direct line *via* Loan, for the hitherto approved route more to the westward, would be disastrous to the traffic which it is intended to serve, and consequently to the financial interests of both Government and the Company. Mr. Wynne informs us that his own local enquiries have led him to the same conclusion. The question was noticed in paragraph 7 of our Despatch No. 132R., dated 18th August 1883, and we think that the views therein expressed, and now confirmed by both the Chief Commissioner and the Agent, should be adhered to, leaving the question of the exact point between the Seonath river and the town of Bilaspur, where the line should turn eastward, to be settled after detailed consideration by the Chief Commissioner, the Agent, and our Consulting Engineer.

We trust, therefore, that we may receive by telegram Your Lordship's sanction to the Agent resuming the suspended operations on the Raipur-Raigarh section. In that event it may be possible to lay the rails on a considerable length towards Bilaspur before the rains of 1888, and to tap at an early date the Bilaspur wheat traffic, which will at once add materially to the receipts of the whole extension from Nandgaon.

6. Considering the importance of the Bengal end of the undertaking, the traffic from Chota-Nagpur which would be accommodated by the opening of a moderate length in that direction, and the facility thereby afforded to the future construction in the central and comparatively inaccessible section between Raigarh and Chandil, we recommend the resumption of the work previously suspended, subject, as regards the eastern portion, to the settlement of the question of junction with the East Indian Railway.

7. With reference to the latter portion of paragraph 9 of the despatch under reply, we have no reason to believe that any material re-alignment will be necessary, except possibly in the portion of the railway which lies between the Eeb river and Dugni. The scheme of operations approved by the Conference contemplates, however, nothing beyond examination and re-survey being undertaken next season between Raigarh and Chandil.

8. Regarding the Bilaspur-Umaria section of the Bilaspur-Katni Branch line, we concur with Colonel Wallace that it is desirable that the heavier works, which will take a considerable time, and will govern the opening of the whole, should be undertaken as soon as possible. The alignment, however, must previously be carefully considered, and the scheme of operations therefore contemplates little except re-survey and estimates during the coming season. We concur with the remarks in Your Lordship's 5th paragraph as to the importance of this line in opening a direct communication with the North-Western Provinces; but the financial resources, on the basis assumed in our next paragraph, would not suffice for more extensive operations here in addition to those necessary in other quarters.

There appears to be no advantage in requiring the Company to take over the working of the Umaria-Katni open line until their operations have reached a more advanced stage.

9. The scheme of operations has been carefully framed with reference to its financial bearing, and proceeds upon the assumption that the Company's share capital alone is to provide for the refund for the Nagpur-Chhatisgarh Railway and for all outlay on construction up to the end of the year 1888-89; leaving to the year following, the provision of the further funds which will then be required.

We understand that the whole share capital, of which a large proportion, at least, is already paid up, is equivalent to 390 lakhs of rupees. The cost of the Nagpur-Chhatisgarh Railway being 121 lakhs, and that of work done on the extension,  $17\frac{1}{2}$  lakhs, the amount to be paid over by the Company as a first debit to the capital account of the undertaking, under clauses 5 and 44 of the contract, is approximately 139 lakhs. Of this, however, a sum of about 20 lakhs, representing

the probable value of the metre-gauge material and stock to be eventually resumed by Government under clause 6, will be reccredited to capital; and as it thus becomes available for further expenditure, it is deducted from this estimated expenditure of the first two years. The table (in Appendix B) accompanying the despatch, showing the proposed progressive annual expenditure, gives only 120 lakhs as the original refund by the Company. This is due to the fact that the remaining 19 lakhs are included under the Indian expenditure of 1857-88 under items A to F; this course having been adopted in consequence of the inclusion of this expenditure in the estimates of the section by which the Chief Engineer framed this forecast. Mr. Wynne's scheme contemplates an outlay of 407 lakhs during 1887-88 and 1888-89, but it seems doubtful whether this will be attained.

10. With respect to the Establishment, we have had the honour to receive Your Lordship's Despatch No. 48, dated 5th May, forwarding details of the officers already appointed and authority for the augmentation of the staff to such an extent and at such times as we might desire. We beg to refer to the proceedings of the Conference already alluded to, which will show the strength and remuneration of the additional officers whom we agree with the Agent in considering indispensable. Some of these, however, will only be required later on in the year, and in the event of the programme of operations now put forward being in all respects approved.

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Dated 10th May 1887.

From—COLONEL W. A. J. WALLACE, R.E., Officiating Consulting Engineer,  
Lahore,

To—The Secretary to the Government of India, Public Works Department.

In accordance with the instructions conveyed in your No. 329 R.C. of 31st March last, I proceeded to Nagpur, and having, between the 18th and 24th ultimo, inspected the open line to Raj-Nandgaon, the unfinished works as far as Raipur, and conferred with the local officers, I have now the honour to submit the report called for, with an opinion as to the programme which it would be most convenient and advantageous to adopt for the conversion and extension of the railways from the Nagpur end.

*Metre-gauge open line.*

I append a detailed statement (not printed) showing the present condition of all the bridges and culverts. Generally speaking, they are not, in my opinion, at all in such a bad state as previous reports would lead one to suppose. The failure of the masonry and brick-work of the waterways in the first 50 miles out of Nagpur is chiefly confined to the wing walls, few of the abutments having given, and the cracks, none of them very serious, seem to be for the most part due to the defective bond between the abutments and wing walls; but original lightness of section and the general absence of flooring were no doubt also factors in these failures. The waterway provided is said to be in some places insufficient, and some of the banks are reported to be not high enough.

These, however, are defects which can be rectified during conversion to the broad gauge; and it is, therefore, if for no other reason, desirable that the change should be made without loss of time, because it is now considered necessary in the interests of safety to stop all night running of trains during the monsoon.

In justice to the officers now in charge, I am, however, bound to report that, as a fair-weather road, the track is at present in thoroughly good running order, well ballasted and sufficiently sleepers with cheap jungle-wood sleepers, while the rails show little sign of wear, and the rolling-stock is maintained in excellent condition. Statements showing the first cost, the age, the work done, and the estimated consequent depreciation of both the permanent-way and the rolling-stock are appended (A) to this report. I also append (B) a list of girders that will be required for conversion to the standard gauge.

*Raj-Nandgaon to Raipur.*

Roughly, about four fifths of the earth work had been finished when construction ceased in 1885, and the banks generally seem to have stood well; they have not suffered much by the rains, and they should now be thoroughly consolidated.

Practically little or no masonry has been done, but some good building-stone from conveniently adjacent quarries is deposited at the sites of the large bridges.

No ballast or other materials appear to have been collected.

At the time of my visit there was a very large traffic being carried by an almost continuous stream of carts along the 43 miles of road from Raipur to Raj-Nandgaon, the whole of which, and probably much more, will seek the rail when completed to Raipur. As regards the most advantageous programme to be adopted, I would recommend the following to be commenced at once:—

The earth-work for the conversion of the metre gauge, including—

- (1) The enlarged banks and cuttings.
- (2) The diversions that will be required while damaged bridges are being repaired or rebuilt, and while broad-gauge girders are being substituted for the metre gauge throughout.
- (3) The elimination of all curves of less than 1,000 feet radius.
- (4) Possibly the substitution of an open cutting for the tunnel, which is said to be dangerous in the rainy season.
- (5) The preparation of building-stone and ballast at the quarries, so as to have an ample supply ready by the close of the rains, when it can be led and used where required.

Simultaneously, the completion of the earth-work from Raj-Nandgaon to Raipur, with diversions at all the waterways, should be pushed on vigorously.

The monsoon being a favourable season for earth-work in the Central Provinces, and being also favourable, owing to slackening of railway traffic, for the plate-laying that will be required preliminary to converting the gauge, I, after full discussion with the local railway officers, despatched the following telegram to your address from Nagpur on the 22nd ultimo:—

“Important to complete earth-work promptly for converting open line and on to Raipur with diversions. I recommend this being commenced at once under Davidson with present staff, supplemented by one executive to replace Large going on leave, and three additional assistant engineers with subordinates. The permanent way with steel sleepers should be supplied at once, so that laying may commence next June when traffic slackens; girders should begin arriving in October and all be delivered by January next for open line certainly. This will give only five months or erection before rains of 1888, when metre-gauge material might go if broad-gauge rolling-stock can be ready. If above cannot be done, metre gauge must stand till after monsoon 1888.”

The above states the case in a condensed form. It is evident that the prompt conversion of the open line and the extension to Raipur depend mainly on the rapidity with which the necessary permanent-way, bridge material, and rolling-stock can be supplied. I have specified steel sleepers because wood cannot be obtained in time locally for the sections of line referred to. Good sal and teak will doubtless be obtainable later on for use beyond Raipur, from the forests in advance, which are reported to yield excellent timber.

For the conversion, the steel sleepers can be interpolated between the metre-gauge sleepers when the earth-work is ready, and the broad-gauge rails can then be laid outside without disturbing traffic. A similar operation was most successfully carried out in the Punjab a few months ago, when the salt branch from Lala Musa to Bhera was converted to the standard gauge.

The balance of advantages seems to be strongly in favour of the immediate con-

version of the metre gauge. Among the chief reasons in support of this opinion the following may be briefly stated :—

1. The earliest possible removal of the inconveniences due to break of gauge at Nagpur.
2. The early withdrawal of the restriction to daylight running only between June and October.
3. The liberation of the metre-gauge rails and rolling-stock while still in good order and consequently saleable to advantage.
4. The increased facilities that will be afforded in carrying on the extension of the system.
5. The means thereby obtained for the early extension of the broad gauge beyond Raj-Nandgaon, with a view to securing the large and remunerative traffic from Raipur.

#### *Bilaspur to Umaria.*

Regarding the proposal to commence work from Umaria towards Bilaspur, I spent a day (26th ultimo) at Umaria in making enquiries and in examining the plans and estimates, and I think no time should be lost in making a start there, for the works are *very* heavy in places, especially miles 135 to 155 from Katni, *i.e.*, Pendra Road Station to Khongsarh Station; moreover, there seems to be a fair chance of traffic when the line shall have been opened to Sohagpur (78 miles from Kanti) and Pendra (134 miles from Katni). Mr. Reynolds, Manager of the open line and colliery, says large quantities of grain from those places are now carried past Umaria into Katni by bullocks.

To give an idea of the magnitude of the works, I made the following extracts from the estimates, &c. :—

Between miles 135 and 155 there are very heavy cuttings and banks, with two tunnels (1,000 feet and 300 feet long); the earth-work alone for the Bhoortonk incline, 12 miles long (142 to 154), costing R11,80,000, or R98,500 per mile on the average, some of it being estimated to cost over R1,40,000 per mile.

*From Umaria to Sohagpur, 41½ miles.*—The earth-work is comparatively light, though it amounts to R17,590 per mile. The total estimate is R37,56,000, or R90,500 per mile.

*From Sohagpur to Pendra Road, 56½ miles.*—Total of estimate, R41,58,000, or, per mile, R73,279. Earth-work, R8,414 per mile.

*From Pendra Road to Bilaspur, 62½ miles.*—Total of estimate, R68,80,000. Total cost per mile, R1,09,000.

As regards the question of making over this open line from Katni to Umaria to the Company at once or later, I would recommend waiting, in order that the undivided attention of the Company's officers may be devoted to pushing on construction and other matters more important than the working of this section of open line.

#### *Appendices.*

A.—Abstract of Rolling-stock.

B.—Statement of Permanent-way and Girders required for conversion.

APPENDIX A.  
NAGPUR-CHHATTISGARH STATE RAILWAY.  
*Abstract of Rolling-stock showing age, cost and work done.*

Particulars.	YEAR DURING WHICH RECEIVED.						Total.	Cost of each when first received.	Average mileage of each vehicle on 30th March 1897.	Average age of each vehicle of each class.	REMARKS.
	1890.	1891.	1892.	1893.	1894.	1895.	1896.				
B. Class . . . . .	2	...	...	...	...	...	...	R 13,440	41,961	7 0	Not new when received.
F. " small . . . . .	10	...	4	...	3	2	...	{ 15,406	93,392	} 5 3	All other stock new received.
F. " big . . . . .	...	...	...	...	6	...	...	{ 19,503	33,238	2 10	
O. " . . . . .	...	...	...	...	...	...	...	{ 18,406	83,082	...	
TOTAL . . . . .	12	...	4	...	9	2	...	4,50,512	...	...	
Reserved Carriages (special). . . . .	...	2	...	...	...	...	...	...	...	...	
First Class Saloon ( " ). . . . .	...	...	...	1	...	...	...	{ 6,924	26,236	5 4	
Inspection " ( " ). . . . .	...	...	1	...	...	...	...	{ 4	79,788	5 1	
Ordinary First Class . . . . .	...	...	1	...	...	...	...	{ *3,974	129,085	5 6	* 8 Composite @ 3,974 each.
Composite, First and Second Class . . . . .	...	9	2	...	...	...	...	{ 3,601	74,918	5 2	5 Second " 3,601 "
Second Class, ordinary . . . . .	...	1	1	...	...	...	...	...	...	...	+ 27 Third and Fourth Class @ 2,400 each.
Third Class, ordinary, with Brakes . . . . .	...	2	...	...	...	...	...	{ +2,100	129,863	5 10	20 Fourth Class @ 2,157 each.
Third Class, ordinary, without Brakes. . . . .	...	14	...	...	...	14	0	...	...	...	
Intermediate Class . . . . .	...	...	...	10	...	...	...	{ 2,487	170,143	3 10	
Composite Carriage (First, Second, Intermediate) and Third Class with Brakes. . . . .	...	1	...	...	...	...	...	...	10,287	6 1	

LOCOMOTIVE ENGINES.

CARRIAGE STOCK.

WAGON STOCK.									
Brake Vans (Passenger and Goods)	18	...	...	...	...	6	24	{	£2,300
Horse Boxes	...	...	4	...	...	...	4	{	2,588
Carriage Trucks	...	...	3	...	...	...	3	{	703
TOTAL	18	29	12	11	...	20	96		2,61,863
Iron covered Goods	...	...	70	87	24	26	216	{	(a) 988
Wooden covered Goods	186	11	...	...	...	...	206	{	1,010
Powder Vans	...	1	...	1	...	...	2	{	1,268
Iron underframe (wooden body)	49	4	...	...	...	...	53	{	(b) 705
Ditto (iron body)	35	...	...	...	150	...	185	{	803
Ditto (with brakes)	...	...	...	...	...	...	...		...
Timber Trucks	8	...	...	...	...	...	8		841
Ballast Wagons	68	9	...	...	...	...	77		492
Broad gauge, low-sided	...	1	...	...	...	...	1		...
Travelling Cranes	...	...	4	...	...	...	4		4,749
TOTAL	355	26	83	88	171	26	752		6,83,818
Grand Total first cost of Rolling-stock									13,96,103
									...

NOTE.—The above abstract has been prepared from figures furnished by the Examiner of Accounts and the Locomotive Superintendent. Taking the life-mileage of a locomotive at 25,000 miles per annum for 20 years, 6 625,000 miles in all, it will be seen that these engines are still in their first youth.

W. A. J. WALLACE.

7th May 1887.



*Estimated Annual Expenditure in lakhs of rupees.*

	1887-88.		1888-89.		1889-90.		1890-91.		1891-92.		REMARKS.
	Indian.	English.	Indian.	English.	Indian.	English.	Indian.	English.	Indian.	English.	
A. Conversion of Nagpur to Nandgaon .	20	35	18	...	...	...	...	...	...	...	For Nagpur Chhattisgarh and Ketni-Umaria Railways.
B. Nandgaon to Raigurh .	30	12	60	35	12	...	...	...	...	...	
C. Umaria to Pendra .	5	...	5	...	15	22	15	...	5½	...	
D. Seetarampur to Chandil .	10½	...	20	...	20	17	7½	...	...	...	
E. Raigurh to Chandil .	1	...	20	...	60	...	60	...	21	...	
F. Pendra to Bilaspur .	½	...	5	...	17	14	15	...	10½	...	
G. Refunds to Government .	120	...	...	...	...	...	45½	...	...	...	
H. Rolling-stock .	...	20	...	10	...	30	...	10	...	...	
TOTAL .	187	67	128	45	124	83	143	10	37	...	

Total for the years 1887-1889 is . . . . . 427 lakhs.  
 Deduct refunds for rolling-stock and permanent-way . . . . . 20 „

Estimated expenditure . 407

## APPENDIX B.

## PROPOSED DATES FOR ORDERING PERMANENT-WAY AND GIRDERS.

1. *Nagpur to Raipur*—

Permanent-way to be ordered at once; delivery to commence as soon as possible and completed by November 1887.

Girders ditto ditto; 150 feet spans for the Weingunga to come out at once.

2. *Raipur to Bilaspur*—

Permanent-way to be delivered by *March* 1888, to enable rails to be laid on banks before rains.

Girders to be delivered by September 1888, to allow of their being delivered at bridge site at commencement of working season.

3. *Bilaspur to Raigarh*—

Permanent-way delivery to commence, September 1888, and completed by November 1888.

Girders to be delivered, November 1888, in time for cold-weather season.

4. *Seetarampur to Chandil*—

Permanent-way to be delivered by March 1889 } Payment to be made  
Girders ditto ditto, ditto } in 1889-90.

5. *Raigarh to Chandil*—

Permanent-way delivery to commence, September 1889.

Girders ditto ditto ditto.

6. *Umaria to Pendra*—

Permanent-way delivery to commence, January 1889 } Payment in  
Girders ditto ditto, September 1889 } 1889-90.

7. *Pendra to Bilaspur*—

Permanent-way delivery to commence, January 1890.

Girders ditto ditto, September 1890.

The proposals are based on the plan of laying the permanent-way throughout on the banks as soon as they are ready, and opening the line for construction purposes, with diversions at the different bridges, as soon as possible.

T. R. WYNNE.

Telegram, dated 15th August 1887.

From—Secretary of State for India, London,

To—Viceroy, Simla.

Your Railway Despatch No. 120, 24th June last. Original route between Raipur and Raigarh to be adhered to.

No. 84 R., dated 18th August 1887.

From—The Secretary of State for India,

To—The Government of India.

I have had before me in Council your letter, No. 120, Railway, dated the 24th Bengal-Nagpur Rail- June, reporting your proceedings in connection with way, direction of line, the Bengal-Nagpur Railway.  
&c.

2. You will have learnt through the Company that the proposal to substitute a direct line *via* Loan for that originally intended between Raipur and Raigarh was abandoned by the Board, and that directions\* were

\* Letter No. 5.  
given to their Agent on the 17th June to proceed at once with the prosecution of the works.

3. I quite concur in your desire that the Bengal end of the undertaking should be commenced, as well as in your determination to require the Bilaspur-Umaria section of the Bilaspur-Katnai branch to be carefully examined and re-surveyed before the alignment is fixed and the work of construction is sanctioned.

4. The cost of operations and of materials during the next two years, together with the sum of 120 lakhs to be refunded to your Government, will, according to the estimate of 134 lakhs in 1887-88, and of 173 lakhs in 1888-89, and after deducting 20 lakhs for narrow-gauge rolling-stock, &c., which the Company will recover, exceed the 890 lakhs, which represent the 3,000,000*l.* raised by the Company, by 17 lakhs. You are doubtful, however, whether this outlay will be attained.

5. Should the progress made reach or exceed the expectations now held out, it will be necessary to require the Company to raise more money in 1888-89. You will, no doubt, keep me duly informed of the expenditure incurred, so that the necessary measures may be taken, in communication with the Company, for raising fresh capital.

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No. 38 (Railway), dated 19th March 1888.

From—The Government of India,

To—The Secretary of State for India.

We have the honour to report, for the information of Your Lordship, our proceedings in connection with the question of the junction of the Bengal-Nagpur Railway with the East Indian Railway in the neighbourhood of Sitarampur.

2. When the orders for the commencement of work were received in 1884, the line had been already laid out and land plans prepared with the view of making the junction at Sitarampur. Proceedings were at once taken for acquiring the land under Act X of 1870, and work was commenced on this alignment within a short time of the receipt of those orders.

3. As early as January 1885 difficulties arose with respect to the very large demands for compensation preferred by some of the Coal Companies through whose property the line was taken, and in February of that year orders were issued by us to the Director General of Railways to stop immediately all works on land under which coal was known or suspected to lie, from Sitarampur southwards, and to consider the practicability of a new alignment which should not go through the tract in regard to which difficulty had arisen, and which, it was suggested, might effect a junction with the East Indian Railway at Assansol or some other point.

The magnitude of the difficulty may be judged of from the fact that one claim then preferred amounted to over 27 lakhs of rupees, and it was believed that the aggregate amount would not be less than 70 or 80 lakhs.

4. As Your Lordship is aware, these claims led to the passing, on 16th October 1885, of the Land Acquisition (Mines) Act of 1885, which removed some of the difficulties in dealing with cases of the kind; and the various Coal Companies concerned agreed to the settlement under this Act of pending claims for compensation for the land required for the Bengal-Nagpur Railway.

5. Whilst the discussions in connection with the amendment of the Land Act

Letter No. 1318<sup>a</sup>, dated the  
27th May 1886. (Enclosure  
No. 1.)

were in progress, a line had, under the orders referred to in paragraph 3 above, been roughly laid out to Assansol, and the Engineer-in-Chief of the Railway strongly urged

the advantages of the new alignment, not only on account of considerations connected with the coal, but also with reference to the greater convenience of Assansol for traffic, and on engineering grounds.

An alternative line suggested by the Consulting Engineer to the Government of India for State Railways was afterwards considered and found impracticable, but orders on the subject were deferred, pending the passing of the new Act.

6. As a good deal of work had been done in 1884, and in the early part of 1885, on the old alignment, and as, moreover, the Coal Companies had, as above mentioned, consented to the application of the new Act to the land required for the railway and previously taken up, the question of altering the route had not been reopened up to February 1886, when work on the line was stopped. No land plans had been prepared at that time in connection with the Assansol route, and although our Engineers had entered upon some of the land on the Sitarampur route, its acquisition had not been completed, and further steps in this direction were held in abeyance in connection with the stoppage of work generally.

7. Matters remained in this state until the receipt of Your Lordship's Railway Despatch No. 36, dated the 24th March 1887, in which the details of the arrangements with the Bengal-Nagpur Railway Company were communicated to us.

In paragraph 9 of that despatch allusion was made to the probability of the necessity for a re-survey of a part of the line between Sitarampur and Bilaspur; and in a letter from the Board of Directors of the Company to their Agent in India, the question of the proper place for a junction with the East Indian Railway was prominently brought forward, the Board expressing their preference for a junction as far east as possible consistent with reasonable economy, and suggesting Ranigunj as a possible junction.

8. On receipt of Your Lordship's despatch above referred to, we instructed the Consulting Engineer, Central Division, to consider, in communication with the Agent and Chief Engineer of the Company, the four alternatives which had at various times been proposed,—*viz.*, Barakar, Sitarampur, Assansol, and Ranigunj. This matter was briefly alluded to in paragraph 6 of our Railway Despatch No. 120, dated the 24th June 1887.

9. The whole subject was very fully reported on in a memorandum by the Agent, which, together with a note by the Consulting Engineer for Railway, Central Division, was forwarded to us by the latter officer with his letter as per margin. The opinions of the Agent and of the Consulting Engineer, which were in general accord, are briefly summarised below.

10. The Barakar route leaves the Bengal-Nagpur Railway at Ragoonathpur, and bearing to the west, crosses the Damuda River west of Barakar, turns again to the east, and after again crossing the Barakar River runs into the Barakar Station.

This alignment labours under the disadvantage of lengthening the through route to Calcutta, at additional cost to the Bengal-Nagpur Railway Company without any corresponding benefit. There is no likelihood of securing such a large local traffic as would justify additional expenditure; most of the local produce, which finds its way to the East Indian Railway at Barakar, originates from the direction of Ragoonathpur and Purulia, and thus comes on to the present alignment of the Bengal-Nagpur Railway; whilst goods from the direction of Benares would in any event go straight to the East Indian Railway at Barakar.

11. The Ranigunj route also leaves the main line at Ragoonathpur, and turning east passes along the south of the Damuda River until it is abreast of Ranigunj, when it crosses the river and runs into the Ranigunj Station.

The advantages of this route are that it gives a through route to Calcutta 1½ miles shorter than any of the other routes, whilst to the Bengal-Nagpur Rail-

way Company it has the additional recommendation that it gives to that Company a greater length of through carriage to Calcutta, whilst diminishing the lead on the East Indian Railway. Unfortunately, however, a satisfactory crossing of the Damuda is not obtainable, and the land in the neighbourhood of Ranigunj is so cut up with coal-fields that heavy compensation claims would have to be paid here, the coal lying close to the surface. Further, a good deal of expenditure would be necessary in improving the station, and the approach from the Damuda, if that river were crossed at the most convenient place, would be unsuitable from an engineering point of view, owing to heavy grades and curves which are unavoidable.

12. The Sitarampur route, though apparently originally selected because it was supposed to traverse a great extent of the coal-fields, is shown to leave the greater part of them untouched, and though all the claims originally advanced by the coal-owners could not be sustained under the Land Acquisition Act of 1885, to the application of which they had agreed, there would still be considerable and undefined liability with reference to coal which, owing to its proximity of the surface, could not be worked without endangering the line. Further, the Sitarampur Station is unsuitable for a junction on various grounds, and the through distance is greater than on either of the two routes last discussed. It has, however, the advantages that the land has been already entered upon, and one third of the earth-work done, and that the Damuda crossing is a good one.

13. The Assansol route skirts the coal-fields, and liability for compensation will consequently be reduced to a minimum by this route; the Assansol Station, which is a changing station for the East Indian Railway, is far superior to Sitarampur; the crossing of the Damuda, though a little longer than that on the Sitarampur route, will probably not be more expensive; and as compared with Sitarampur, the through route will be shorter by 5 miles. The East Indian Railway Company are said thoroughly to agree in the selection of Assansol.

14. On these reports we ordered the line to Assansol to be re-surveyed, staked out, and estimated in detail, and sent a copy of the report to the Government of Bengal for opinion. This opinion was received shortly afterwards, and was in favour of the Assansol route.

Consulting Engineer, Central Division's No. 1067C., dated the 14th November 1887, and enclosure. (Enclosure No. 3.)

15. The further reports and estimates called for were received in November last. We beg to enclose them herewith.

16. The report sets forth the advantages of this route, and shows that besides avoiding complications for mineral rights, the Assansol route is in itself a better one than the Sitarampur alignment. Its cost is not materially greater. The diminution of the lead over the East Indian Railway will effect a reduction in the freight to Calcutta of the coal from the Damuda-Barakar District, and consequently in its market price.

17. It seemed to us, on a perusal of these various reports, that there was little doubt that Assansol is the proper junction, but there remained the fact that one at least of the Coal Companies owning land on the Sitarampur route had agreed to the liability of Government for compensation being determined under the Act of 1885 after the land had been in some parts entered upon, in the belief that the railway would follow that route, and thus place them in a more advantageous position, with reference to their markets, than if the line were taken to Assansol, and that, in the event of such a change in alignment as was proposed, they might claim compensation for the land previously acquired, under the Act of 1870, which alone was in force at the time it was entered upon.

18. Although the Company would probably not have been able to substantiate such a claim in a court of law, we considered it best to endeavour to settle the matter amicably, and with this view, at our request, the Government of Benga

deputed Mr. H. H. Risley, C.S., who had taken an active part in the discussions of 1885 in connection with the Land Act of that year, to enter into negotiations with the various companies affected, in view to obtaining their acquiescence in the change proposed.

This duty, we are glad to have the opportunity of reporting, was conducted with much tact and ability by the officer deputed for the purpose.

19. The Equitable Coal Company was the only one with regard to which any difficulty was experienced, and that Company, though it insisted strongly on its rights as alluded to in paragraph 17 above, ultimately agreed to their claims for compensation for the land already taken up on the Sitarampur route being settled under the Act of 1885, if the following conditions were agreed to by Government and the Bengal-Nagpur Railway Company:—

- (1) That a branch line (about 6½ miles long) should be constructed to their coal-field.
- (2) That no additional charge for freight should be levied by the Bengal-Nagpur Railway Company on this branch mineral line.
- (3) That the Bengal-Nagpur Railway Company should construct, free of cost to the Coal Company, two sidings,—namely, one to Dishergurh incline, and the other to Chota Deamoria No. 1 pit.
- (4) That the Equitable Coal Company on its part should reserve the right, in the event of the Company working coal on different sides of the branch mineral line, or on different sides of the sidings and byes above specified, to put through the coal acquired by the Company two galleries, each 6 feet by 6 feet, for ventilation, haulage, or such other purposes as might be required in the course of mining; the Coal Company at the same time undertaking not to work the coal underneath the branch mineral line or the sidings and byes in a way that might damage the line.

20. As soon as these arrangements had been agreed upon by the Equitable Coal Company, and the Agent of the Bengal-Nagpur Railway Company had expressed his willingness, subject to the approval of the Board, to accept the proposed conditions, we sanctioned the plans and estimates for the 15 miles from Assansol to the junction with the former alignment, the amount of the estimate being Rs. 21,15,797, and directed that the necessary measures should be at once taken for acquiring the land under the Act of 18-5.

We adopted this course because it is a matter of importance to the Railway Company to commence work at an early date at the Damuda Bridge, as they have already the engineering staff upon the ground, and it is desirable to save as much of the present working season as possible, because, if a good start be made soon with the foundations, the bridge will probably be sufficiently advanced to allow of work being proceeded with during the rains.

21. The Board of Directors of the Company have since ratified their Agent's action.

22. We trust that our proceedings in the matter will meet with Your Lordship's approval.

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[ENCLOSURE NO. 1 TO RAILWAY DESPATCH NO. 38 OF 1888.]

No. 14418, dated the 27th May 1885.

From—The Engineer-in-Chief, Nagpur-Bengal Railway,  
To—The Director General of Railways.

In forwarding a copy of letter No. 475, dated the 21st April 1885, together with 4 tracings received from Mr. Whitty in connection with a proposed junction

at Assansol, in lieu of the existing arrangement for a connection with the East Indian Railway at Sitarampur, I would offer the following remarks.

2. The line roughly laid out by Mr. Whitty would join the existing line at a point about 16 miles from Assansol. The line has only been roughly surveyed at present, sufficient to enable a fair conclusion being arrived at, with reference to the relative merits of joining the East Indian Railway at Assansol or Sitarampur.

3. As regards Sitarampur, I have to observe that, if the Nagpur and Bengal Railway were worked independently of the East Indian Railway, it would be placed at a great disadvantage if this junction were retained, for the following reasons :—

- (a) It would enter Sitarampur on the Barakar Coal Branch, and by the arrangement proposed the station on the branch line would be independent of the East Indian Railway main line, while there is no convenient ground in the neighbourhood either for the erection of staff quarters, or for a station with engine-shed accommodation for the Nagpur-Bengal Railway.
- (b) That as the East Indian Railway are rebuilding the station-house at Assansol and providing the necessary accommodation for passengers, such as refreshment and waiting rooms, &c., it is not probable that they would be disposed to incur any considerable outlay for a joint station at Sitarampur.
- (c) That as Assansol is an engine-changing station on the East Indian Railway, where there is consequently a stoppage of all trains, it would be inconvenient to the East Indian Railway to incur an additional stoppage of, say, 10 minutes at Sitarampur, which is only 7 miles from Assansol.
- (d) That to work a through goods traffic to Calcutta from the Nagpur-Bengal Railway, it is desirable that there should be a small station on the Nagpur-Bengal Railway near to, or at, Sitarampur, and that engine power would either have to be kept by the East Indian Railway at Sitarampur to work this traffic, or the Nagpur-Bengal Railway would require running powers over the East Indian Railway between Sitarampur and the Assansol engine-changing station.
- (e) That a better gradient could be had into the Assansol station than into the Sitarampur station, and that a short terminal platform, by prolonging the new platform now being built, could be obtained at Assansol for the Nagpur-Bengal Railway by pulling down some small buildings to allow the line to pass to the back of the existing platform.
- (f) That, assuming that a small station would be required by the Nagpur-Bengal Railway at or near to its junction with the East Indian Railway, a better site would be available near Assansol than at Sitarampur, and that the staff-quarters and engine-shed, &c., could be built on high and dry soil, while at Sitarampur, or the country between it and the Damuda River, it is not clear, from the opportunities I have had of seeing the ground, where a favourable site could be obtained.
- (g) That if Sitarampur is adhered to as a junction station with the East Indian Railway, a larger outlay (some lakhs) may be necessary hereafter to effect suitable terminal arrangements, &c., &c. I do not think this outlay can be forecast at present, since, as before stated, a favourable site for a station and staff-quarters, &c., has not been fixed.
- (h) That there is from external appearance a greater probability of effecting a more satisfactory arrangement for water-supply near Assansol by the purchase and enlargement of existing tanks near the proposed station for the Nagpur-Bengal Railway than there now exists in the

neighbourhood of Sitarampur. I refer to independent sources of supply, and not to a participation in the supply obtainable from the East Indian Railway reservoirs.

- (i) And finally that, judging from the surroundings and from the position of Assansol, it appears to me to possess advantages for a junction station which it would be difficult to effect at Sitarampur even with a considerably greater outlay than would be required at Assansol.

4. On the other side of the question lies first and foremost the Damuda Bridge. Whether the proposed junction at Assansol would necessitate the construction of a more costly bridge than would be necessary if a junction with the East Indian Railway at Sitarampur were retained, must remain an open question for the present; at all events, I would, however briefly, state what I think would be the net result if the site were changed for the Assansol junction.

5. On the Assansol line, the river would be about 600 feet wider, and would require, say, 3 additional spans, making 14 spans of 150 feet against 11 spans on the Sitarampur line. But as a set-off against this there would be

- (a) a reduction of 12 feet in the height of the bridge; and
- (b) as rock appears in a nulla on one bank and is visible on the surface of the other, the foundations would probably be shallower on this line than on the Sitarampur line, while 3 or 4 piers could be founded on rock without much trouble or expense.
- (c) There would be a considerable reduction in the amount of earth-work of the approaches of the bridge on the Assansol side.

6. I should not like to hazard an opinion as to which would be likely to be the more costly bridge to construct, but I am disposed to think that there would be very little difference between them.

7. As regards the question of coal rights, it may be stated that, if the Assansol line were adopted, it is not probable that any coal rights would be affected. There are some abandoned pits contiguous to the proposed line between the Damuda River and Assansol; but as the coal is found at a considerable depth below the surface, I have reason to think that the co-operation of those interested in this coal-land could be secured. There would, of course, be surface rights to pay for, but I do not think that we need anticipate any abnormal valuations, nor would the line be located without ascertaining clearly what the liabilities would be.

8. On the Sitarampur route, compensation for surface rights will have to be made, and if we assume that a possible award of Rs50,000 for these rights were made by the Court, I think they could be again sold by Government to parties in the neighbourhood, and thus reduce the outlay for compensation.

9. The amount of earth-work, &c., done on the Sitarampur line, which would have to be abandoned if the Assansol line were adopted, would probably amount to Rs67,788, and if Rs25,000 were accepted as the loss through the sale of surface rights of the land, the net loss to Government by abandoning the Sitarampur route would be Rs92,788.

10. This, no doubt, is a large outlay and should have due weight in finally determining the question of route for the railway, but I am of opinion that this sacrifice would be true economy to Government hereafter, it being an outlay which can be foretold and foreseen; whereas, if the Sitarampur line is retained and the Nagpur-Bengal Railway is hereafter constructed by a company with rights to work its own line, the necessity for providing accommodation in the vicinity of this junctional terminus will involve a much larger outlay than would be necessary if Assansol were determined upon for effecting a junction with the East Indian Railway.

11. It is not clear to me from Mr. Parker's printed report, page 5, para. 48, whether in effecting a junction at Sitarampur it is contemplated to do more than make it an ordinary station *en route* to Assansol, or a terminal junction station, as he says that the details would have to be discussed with the East Indian Railway



officials. I believe, however, that a meeting has taken place with the (to me) very unsatisfactory result that permission will be given to the Nagpur-Bengal Railway to use the Barakar siding, the gradient of which it is proposed to alter and improve. Nothing is, however, stated about siding accommodation or arrangements for goods yard, station, &c., at Sitarampur, but at the same time it would appear from his report that the engines would go to Assansol.

12. No provision has, however, been made in the estimate of the cost of junctional arrangements.

13. It should be pointed out that, if Assansol were determined upon as the junctional station, the length of the Nagpur-Bengal Railway would be lengthened by 7,000 feet, but the through distance to Bombay from Assansol would be shortened by 5 miles.

14. Briefly stated, then, I consider that a junction with the East Indian Railway at Assansol will be of greater advantage to the Nagpur-Bengal Railway than the existing arrangement of joining it at Sitarampur, and that the possible future interests involved would seem to me to indicate that it would be more economical to make a considerable money sacrifice now rather than forfeit the advantages which Assansol appears to possess over Sitarampur as the junctional terminus of the Nagpur-Bengal Railway.

15. This being my opinion, from the preliminary investigations and examination of the country lately made, I should be glad to know whether, on the information submitted, the Government of India would be prepared to accord their approval to the proposal.

16. Please return the plans.

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No. 475, dated the 21st April 1885.

From—J. J. WHITTY, Esq., Executive Engineer, Damuda Division,  
To—The Engineer-in-Chief, Nagpur-Bengal Railway.

I have the honour to forward per parcel post four tracings, as per margin, of the

1. Plan of proposed junction with East Indian Railway at Assansol; scale 1,000 feet to an inch.

2. Longitudinal section ditto; scale 400 feet horizontal and 40 vertical.

3. Index map showing present line to join East Indian Railway at Sitarampur and proposed at Assansol; scale 1 mile = 1 inch.

4. Plan showing existing working arrangements, &c., at Assansol; scale 80 feet to an inch.

proposed alternative line to join the East Indian Railway at Assansol, part of which you went over on the 1st instant.

You will see by the Index map that, though the line to Assansol is 7,000 feet longer than the present one to Sitarampur, the actual distance from Assansol to where the two lines join is only 16 miles against 21 *via* Sitarampur, and I need not say that Assansol, being a changing station on the main line with a large engine-shed, repairing shops, &c., is much more convenient and suitable for a junction station than Sitarampur, which can hardly be called more than a colliery siding on a short branch line of 5 miles long, which would never be made much more of and would necessitate extensive buildings for engine-sheds, shops, &c., and though the crossing of the Damuda will be about 600 feet wider, the bridge need only be 60 feet above the bed of the river, and can be founded on rock for over 600 feet at least, whereas the present crossing entails a bridge of over 72 feet high on anything but good foundations.

The junction at Assansol will, I presume, have to be arranged after consulting the Chief Engineer, &c., of the East Indian Railway, but might be either, as shown in red on the plan, showing existing working arrangements of Assansol Station, which would necessitate widening the bank for about  $\frac{1}{2}$  a mile, and lengthening the 10 feet culvert at chain 624, and the five 15' arches at chain 637, and also the up-platform, or by putting in a cross-over road at chain 639 and using the present up and down platform.

Good building-stone and ghooting for lime can, I believe, be got at many places along the proposed line, which, I also have no doubt, can be a good deal improved when being properly staked out, &c.

[ENCLOSURE NO. 2 TO RAILWAY DESPATCH NO. 38 OF 1888.]

No. 505 C., dated the 18th July 1887.

From—LIEUT.-COLONEL W. SHEPHERD, R.E., Consulting Engineer for Railways,  
Central Division,

To—The Secretary to the Government of India, P. W. Department.

I have the honour to forward, for your information, a copy of Agent's, Bengal-Nagpur Railway, No. 466, dated 11th instant, on the subject of the junction of the Bengal-Nagpur Railway with the East Indian Railway.

2. From my report, which accompanies, you will see that we agree in the opinion that Assansol is to be preferred to any other junction which has been proposed.

3. Orders for the re-survey of this route, if finally approved by Government, are requested.

*Note dated the 18th July 1887 by Consulting Engineer for Railways, Central Division, on the Junction of the Bengal-Nagpur Railway with the East Indian Railway.*

The junction of the Bengal-Nagpur Railway with the East Indian Railway should undoubtedly be placed at Assansol; the result of my local observations place me in complete accord with the views and recommendations of the Engineer-in-Chief, Nagpur-Bengal Railway (which will be found in the Public Works Department Pros. R. C., August 1885, No 164, Part A).

2. The arrangements already existing at the East Indian Railway Station, which, besides being an engine-changing station, is the headquarters of a considerable body of European railway servants, are all that are required either to facilitate the transfer of traffic, to promote the economy of time in through working, or to assist in maintaining the security of an important knot in the railway communication of the country and in protecting the Damuda Bridge.

3. Past expenditure on land and earth-work on the Sitarampur line to 31st March 1887 has been given me as Rs 74,310 in the Damuda Division. To complete this length, however, Government has still to settle with several coal-mine owners who assert well-founded, though exaggerated, claims.

	Rs
Land . . .	1,000
Earth-work . .	73,310

4. The coal near Sitarampur lies close to the surface, and working under the railway could not be safely permitted. Government could not acquire the land with surface rights only. Compensation would raise the cost for land still to be taken up on the Sitarampur route over the outlay for land on the alternative route by a sum considerably higher than the amount mentioned above as having been already spent, and which would be relinquished if the Assansol junction were accepted.

5. On the line of the Assansol junction there is no coal worked; if it exist, it is probably at some depth: the cost of surface land would, therefore, be small.

6. By paragraph 44 (a) of the Contract, the cost of taking up all land is charged to the Railway Company; the latter have claims to be considered on this point, and the views of the Agent are adverse to the Sitarampur route on this account.

7. As regards the bridge over the Damuda, the left bank of the river at either crossing is well defined, but the right bank, though closer and more marked in the upper crossing, is low at both places; the spill of the river in floods must rise over this bank, for which a bridge would have to provide some outlet. The two crossings are only about 6 miles apart; no material drainage joins the Damuda between them; the effective waterway of either bridge must practically be the same. After inspecting both sites, I do not think the lengths of the bridges would differ so much as 600 feet. The depth at which safe foundations may be expected is said to be more favourable at the lower crossing. The cost of a bridge over the Damuda will, I think, be found much the same by whichever route the river shall be crossed.

8. I have already referred to the conveniences at the Assansol Station for junction purposes. The East Indian Railway are prepared to accept a junction here without requiring any further outlay; the only additional work would be quarters for the guards and drivers of the Bengal-Nagpur Railway located there.

9. The defects of Sitarampur as a junction have already been pointed out by the Engineer-in-Chief, Nagpur-Bengal Railway. The East Indian Railway Station has low ground on either side, towards Barakar, on which branch line the Bengal-Nagpur Railway would run in and which would have to be doubled; there is a bridge of 8 spans of 12 feet just outside the points where rail-level is 23 feet above the nala bed; the Barakar Branch immediately after crossing this low ground runs into a heavy cutting. The north side of the station is all low ground, while the small patch of good ground on the south side is already occupied by the coal platform and sidings, a collection of huts and a small bazar.

10. It is well also to consider the advantages to the discipline and comfort of the Bengal-Nagpur Railway staff which would follow from their joining a large and well-organised colony as that at Assansol, and the future convenience to Government when both undertakings become their property in having their staff at one central point instead of being distributed between two stations.

11. There remains the question whether the Bengal-Nagpur Railway loses any advantage by abandoning a line which carries it past the mouths of several coal mines, from which the Company might supply themselves cheaply with fuel, and from which they might receive a profitable traffic.

The coal worked at present all goes eastward, and I cannot anticipate any public traffic in coal over the Bengal-Nagpur Railway westward; the former would be of small value to the new line, and the coal-owners, if they required greater facilities in their present trade, could no doubt obtain them from the East Indian Railway, of which line a siding to all these collieries seems a natural offshoot. At present there is a siding which runs a short distance out from Sitarampur Station and which could be prolonged.

12. It is not certain whether, given the Bengal-Nagpur Railway junction at Sitarampur and their line close to the collieries in question, that they would provide themselves from these collieries in preference to obtaining coal of a different quality or delivered at better rates either from the Raniganj, Barakar, or other mines, which are all at no great distance. The present proposal of the Agent is to work towards the junction from the first changing station—Chakhardarpur—on their own lines, say, 130 miles off. Here the Bengal-Nagpur Railway may probably be able to supply themselves with coal more cheaply from mines on the other side of the changing station possibly worked by themselves,—in any case with coal hauled over their own line at a minimum cost.

13. There is still left to consider the possibility of making the junction at Sitarampur, but working from Assansol. This utilises the East Indian Railway conveniences at Assansol, saves the money already spent on earth-work, but is hampered with the compensation to coal-owners, which might, it seems to me, reach several lakhs. Running powers would have to be acquired over the East Indian Railway,

which the latter may be disinclined to accord as interfering with the traffic of their line on a portion where it must be heavy; the through distance to Howrah would be five miles longer than by the direct Assansol junction.

14. To recapitulate, a direct junction at Assansol, notwithstanding greater length of new line to be constructed and past expenditure to be abandoned, would prove cheaper than any alternative by the mere fact of avoiding crossing the coal mines; it further saves considerable outlay on the part of the Bengal-Nagpur Railway by taking advantage of conveniences already existing; the cost of bridging the Damuda is not affected, and running powers over the East Indian Railway with all their inconveniences are unnecessary.

15. I recommend that the Company be called on to re-survey this route at once.

The line roughly laid out by Mr. J. J. Whitty, C.E., to connect Assansol with			the Bengal-Nagpur Railway, has heavier gradients than perhaps may be found necessary; there are, however, many miles of $\frac{1}{100}$ in the Bengal-Nagpur Railway as at present graded.
	Miles.		
$\frac{1}{100}$ for . . .	$\frac{1}{2}$		
$\frac{1}{100}$ " . . .	$\frac{1}{2}$		
$\frac{1}{100}$ " . . .	1		
$\frac{1}{100}$ " . . .	1		

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No. 466, dated the 11th July 1887.

From—The Agent and Chief Engineer, Bengal-Nagpur Railway Company.

To—The Congs. Engr. to the Govt. of India for Railways, Central Division.

I have the honour to forward a copy of my report on the East Indian Railway junction question, and should be obliged if early steps could be taken with a view of arriving at a conclusion as soon as possible.

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*Memorandum by T. R. WYNNE, Esq., Agent and Chief Engineer, on Junction of the Bengal-Nagpur Railway with the East Indian Railway.*

Four routes and junctions have been proposed where the Bengal-Nagpur Railway should join the East Indian Railway.

*No. 1 Route* leaves the Bengal-Nagpur Railway main line at Ragonathpur and bearing to the west crosses the Damuda west of Barakar, turning again to the east and crossing the Barakar River runs into the Barakar Station of the East Indian Railway. This route has two alternative lines, as shown in the attached tracing.

*No. 2 Route* runs from Ragonathpur across the Damuda just below where it joins the Barakar River, then through the Deshagarh coal-field belonging to the Equitable Coal Company, eventually joining the East Indian Railway at Sitarampur Station.

*No. 3 Route* branches off route No. 2 near Pachet, and turning to the east crosses the Damuda about 5 miles lower down than the Sitarampur route, and finally runs into the East Indian Railway at Assansol.

*No. 4 Route* leaves the main line at Ragonathpur and turning east runs on the south of the Damuda till opposite Raniganj, where it crosses the river and runs into Raniganj Station.

#### ROUTE No. 1.

I cannot see that any advantage will be gained by choosing this alignment. It will lengthen the through route to Calcutta at additional cost to the Bengal-Nagpur Railway with no corresponding advantage.

It is of no advantage to our Company to run through the Wiranukur coal-fields: it would merely be spending money to open them up for the East Indian Railway. Coal for our own purposes can be obtained in a less expensive way.

Lastly, there is no likelihood of securing such a large local traffic by adopting this route as would justify additional expenditure and increased through length to Calcutta being undertaken. From enquiries at Barakur Station, I found that most of the local produce being sent from there came from the direction of Ragunathpur and Purlia. Any goods coming down the Benares road would go straight to the East Indian Railway Barakur Station. This route should *not* therefore, in my opinion, be selected.

#### ROUTE No. 4.

The junction station for this route is Raniganj. The only advantage I can find for this route is that it gives us a greater length of through carriage to Calcutta, the amount being  $10\frac{3}{4}$  miles. It is also  $1\frac{3}{4}$  miles shorter on the through route to Calcutta than by any of the proposed other routes.

The *disadvantages* are—

- (1) No satisfactory crossing of the Damuda is obtainable.
- (2) The land about Raniganj is so cut up with coal-fields that heavy compensation would have to be paid, as the coal is very close to the surface. The alternative route to Raniganj crossing the Damuda, as in Route 3, has also been examined. The only way to reach Raniganj would be to follow close to the East Indian Railway, as the land between it and Damuda is most unsuitable to run a line across. On approaching Raniganj the land occupied by the coal mines would have to be passed over at the cost of heavy compensation, as previously noted. The advantages of the increased carriage and  $1\frac{3}{4}$  miles shorter through length than *via* Assansol do not seem to me to counterbalance the very heavy cost, estimated at 45 lakhs *plus* compensation for coal rights, that would have to be paid to make the junction at Raniganj.

Raniganj has not much siding accommodation, and a good deal of expenditure in improving the station would be necessary.

The approach from the Damuda if crossed at the most suitable place near would be very undesirable from an engineering point of view, owing to the heavy grades and curves that would be necessary.

The question therefore revolves itself into the relative advantage of the two remaining routes—Nos. 2 and 3—joining the East Indian Railway at Sitarampur and Assansol respectively.

#### ROUTE No. 2.

##### *Junction at Sitarampur.*

This route was selected originally by Government, and the line was laid out, and about one third of the earth-work done on it. The reason for its selection, as far as I can ascertain, was because it was supposed to run through the coal-fields of that part. The coloured tracing attached shows that this was a misconception. It only runs through the narrowest portion of the coal-lands, and leaves the greater part of the coal-fields untouched, the greater part of present line of workings and future coal-fields lying to the east of this alignment.

After the route was selected and work had been begun on it, Government began compensating for the land taken up, and then the various coal-owners, over whose lands the railway went, sent in enormous claims to Government for compensation. The Equitable Coal Company claimed 47 lakhs for their rights on both sides of the River Damuda, and the Rani Suranny claimed some  $1\frac{1}{2}$  lakhs as far as I can ascertain.

Owing to these heavy unanticipated claims, Government ordered an alternative route to be surveyed which would avoid the coal-fields. They at the same time brought in a Mines Bill for the better regulation of compensation for land taken up for railways in a mining district.

The alternative route surveyed is Route No. 3 of the present memorandum.

On my arrival at Sitarampur, I enquired into the present position of affairs by seeing the Managers of the various Coal Companies. I ascertained that the claims previously advanced still existed, but that the Companies were open to reasonable offers. The Manager of the Equitable Coal Company, the Company most concerned, gave me a copy (attached) of some of their claims on the north side of the river.

As far as I understand the Mines Bill, it merely gives Government power to acquire surface rights only if they wish; but should a Coal Company wish to work the coal underlying the railway, it must give 30 days' notice of its intention to do so, after which the Railway Company must declare its decision—

- (a) if it will purchase the underlying mining rights;
- (b) pay compensation so that the mining be done under restrictions, so that the railway may not be injured;
- (c) refuse to pay anything.

In the last case the Coal Company may proceed to work its underlying coal, provided it does not work it improperly. The indefiniteness of the word "improperly" seems to me to indicate a source of litigation and danger to a railway in the future.

There are indications that the Staffordshire system of mining may be soon introduced in this district, the result of which would certainly cause a subsidence of the surface and consequent danger to the railway.

The general result seems to me to be that the Railway Company would have to purchase the mining rights of all coal underlying the land acquired by it when the coal was not at such a depth from the surface that its working could be ignored. When the line runs on route 2 it crosses the outcrop of three seams, dipping 1 in 5, so that even with this dip the coal would be so close to the surface for some distance as would not justify the Railway Company allowing any undermining, and compensation (a) or (b) would have to be paid.

The compensation might not be payable now, but it certainly would in the future when the Coal Companies wished to work under the railway.

The results of the selection of the Sitarampur route will be therefore heavy compensation for mining rights having to be paid now or in the future, and, considering how little benefit the Bengal-Nagpur Railway will get from the fields, it is certainly not justified in incurring such expense.

The crossing of the Damuda on this route is good.

About one-third of the earth-work has been done and the land acquired.

Sitarampur as a junction station is most unsuitable; the Bengal-Nagpur Railway would join on the Barakur branch, necessitating the lowering of a heavy cutting to allow of a fair grade into the station. The whole station buildings and yard would have to be remodelled, as the existing accommodation is a great deal too small for a junction with our line. The East Indian Railway also object strongly to Sitarampur as a junction, on the ground that it would be most inconvenient for them to work it.

The through length to Calcutta is longer than by the Assansol route.

Summing up, therefore, the *advantages* of this route are—

- (1) The land has been already acquired.
- (2) One third of the earth-work has been done.
- (3) Good crossing of the Damuda.

The *disadvantages* are—

- (1) Heavy compensation to Coal Companies.
- (2) No particular facilities are given for the development of the coal-fields as a whole.
- (3) Junction with the East Indian Railway most unsuitable.
- (4) Greater through distance to Calcutta in respect of the Assansol route.

## ROUTE No. 3.

*Junction at Assansol.*

From what has been said regarding Route No. 2, it will be seen that, in my opinion, it is most advisable to skirt the coal-fields and not run through them.

This avoids all future chance of claims for compensation for mining rights.

By following Route No. 3 it is believed, from all I can ascertain on the spot and from the Government geological map of the district, that coal is only found at such a depth on this alignment as will justify its working under the railway being allowed.

A surface branch line can subsequently be made, as shown on the tracing, on condition that the various Coal Companies affected will give the necessary land and lay no claims to compensation for mining rights in return for the facilities offered.

Assansol is a very large station with ample goods sidings and every facility in the way of station arrangements.

The East Indian Railway thoroughly agree in the selection of Assansol as the junction, and, owing to the present large accommodation of the station-yard, it is not anticipated that any new work will be required at present to enable the junction to be carried out.

The crossing of the Damuda is as good as on the Sitarampur route, though the bridge will be a little longer; it is not estimated to cost more, owing to better foundations and reduced height possible of piers.

The through route to Calcutta is about 5 miles shorter than *viâ* Sitarampur.

To sum up, the *advantages* are—

- (1) No heavy claims for coal compensation.
- (2) Great advantages of Assansol as a junction over Sitarampur.
- (3) Good crossing of Damuda.
- (4) Shortening of through route as compared with Sitarampur of 5 miles.

*Disadvantages* —None.

The question therefore revolves itself into whether the loss incurred by abandoning the earth-work done on the Sitarampur route and the loss in re-selling the land acquired is counterbalanced by the disadvantages of the Sitarampur route in regard to coal compensation and unsuitability of Sitarampur as a junction coupled with the other great advantages of the Assansol route.

The loss will be about 1½ lakhs.

In my opinion the loss is nothing in comparison with the other side of the question, and I am therefore of opinion that the Assansol route should be selected and finally adopted.

No. 162, dated the 24th June 1887.

From—T. B. WALTON, Esq., General Manager, Equitable Coal Company, Limited, Sitarampur,

To—The Chief Engineer, Bengal-Nagpur Railway, Purulia, Manbhum.

As promised, I have the honour to hand you two copies out of some of our claims for land taken up for the Bengal-Nagpur Railway.

I beg to call your attention to the form of our claims, and particularly to the last clause italicised.

I have written to my Managing Agents, saying that you would pay them a visit on your return to Calcutta.

Dated the 9th January 1885.

From—T. B. WALTON, Esq., General Manager, Equitable Coal Company, Limited, Sitarampur,

To—BABU JAGAT CHUNDER SHOME, Deputy Collector of Niamatpur. (The Collector, under Act X of 1870, in charge of claims to land to be acquired for the Bengal-Nagpur Railway.)

As the Colliery Manager of the Equitable Coal Company, "Limited," who are the prospective lessors under the patni, amalnamah, hereinafter mentioned, of the land consisting of 1 bigha 9 cottahs and 1 chittack, in the village of Burtoria, in the District of Maubhoom, and in the Pergunnah Chowrasee, referred to in the Government Notifications, Nos 340 and 372, dated respectively the 15th September and 13th October 1884, and as per your notices, dated the 19th December 1884, whereby the Company are required to state the nature of their interest in the said land and the amount and particulars of their claim for compensation in respect thereof, I now beg to submit the following statement of claim, reserving the right to send in more specific details should the Company be advised or required to do so.

1. The Equitable Coal Company are holders of patni lease and amalnamah and license from Raja Nilmoney Singh, the zemindar and owner, to explore for coal, limestone, iron-ore, fire-clay, and all other minerals with the exception of gold, silver, and precious stones, and that such amalnamah extending over the area is held upon the terms mentioned in the Schedule at foot hereof.

2. The said area comprises the plot of land to be acquired by Government under the above-mentioned Notification.

3. The said land comprised within the said amalnamah has been proved by the Government Geological Survey to contain rich beds of coal, iron-ore, limestone, &c., but none of the same has yet been definitely proved by the Company.

4. As consideration for the grant of the said amalnamah, the Company lent and advanced to Raja Nilmoney Singh of Casipur, the zemindar and owner of the said land, the sum of Rs50,000, repayable out of the rents payable to him in respect of all lands held from him by the Company making the said loan, was his granting of the said amalnamah.

5. The Company intend to prove and work the minerals on the said lands and to take a lease thereof in pursuance of the said amalnamah; but not being in a position now to put in a formal claim for money compensation under Act X of 1870, they hereby reserve the right to put in a future claim for the same.

6. In the event of the right to reserve their claim to compensation as aforesaid being refused, the Company's claim to have the value fixed of the minerals within and under the said land to be acquired, upon the basis of value proved in their neighbouring land at Desergur and the Bengal Coal Company's Sanctoria as the value of coal within the area acquired computed on the same basis as has been set forth in their claim for mineral lands at Desergur.

7. The value of the said 1 bigha 9 cottahs and 1 chittack is Rs14-8-0 per bigha, and the Company accordingly claim the sum of Rs421-6-6 as compensation for the market value of the surface of such mineral-bearing lands, exclusive of the minerals therein contained.

8. The Company reserve the right to claim compensation for any damage they may sustain through the interruption to roads, waterways, &c., which cannot be properly valued at present.

9. The total compensation claimed by the Company in respect to the acquisitions of their interest in the said land is the sum of Rs421-6-6, exclusive of minerals, the right of which being reserved above and also irrespective of their claims regarding roads, waterways, &c., to be ascertained hereafter.



Dated the        January 1835.

From—T. B. WALTON, Esq., General Manager, Equitable Coal Company, Limited, Sitarampur,

To—BABU JAGAT CHUNDER SHOME, Deputy Collector at Niamatpur. (The Collector, under Act X of 1870, in charge of claims to land to be acquired for the Bengal-Nagpur Railway.)

As the Colliery Manager for the Equitable Coal Company, "Limited," who are the owners of 42 bighas 16 cottahs and 4 chittacks of lands (class B) in the village of Desergur, in the District of Burdwan and Province of Bengal, referred to in the Government Notification No. 340, dated the 15th September 1884, and as per your Notice No. 541, dated the 12th December 1884, whereby the Company are required to state the nature of their interest in the said lands, and the amount and particulars of their claim for compensation in respect thereof, I now beg to submit the following general statement of claim, reserving the right to send in more specific details should the Company be advised or required by you to do so.

1. The Equitable Coal Company are the owners, under pottahs specified below, of the entire surface and mineral rights in respect of the said land, and also of lands adjacent thereto, subject to the payment of fixed rents on such pottahs respectively specified.

2. The said lands contain three separate seams of steam coal, known respectively as Desergur, of the estimated thickness of 21 feet, Hatual of the estimated thickness of 12 feet, and Sanctoria of the estimated thickness of 16 feet, and the cubical contents of the said three seams within and below the area of lands to be acquired by the Government in pursuance of the said Notification referred to above is equal to 1,053,589 tons or thereabouts.

3. The gross value of the said 1,053,589 tons of coal, at the average rate realised by the Company on sales of similar products, is steam coal R10 per ton, rubble R8 per ton, and coke R13 per ton, and that the average working expenses attending the raising and output of coal, including railway freight, &c., in the same district, is steam coal R8-3-9 per ton, rubble R6-13-6 per ton, coke R8-11-6 per ton, leaving the net value of the said steam coal R1-12-3 per ton, rubble R1-2-6 per ton, and coke R4-4-6 per ton, respectively.

4. In raising the said coal a proportion thereof becomes rubble and a portion thereof dust. The average proportion of rubble is 8 tons per 100 tons raised, and the average proportion of the said dust is 16 tons per 100 tons raised, and following for such various descriptions of coal, the respective values of coal within and under the said area would be as follows :—

	Tons.	R	a.	p.
Steam coal . . . . .	800,728	14,13,785	6	0
Rubble " . . . . .	84,287	97,456	13	6
Coke " . . . . .	56,191	2,40,567	11	6
Loss of dust in making coke .	112,383	...		
	<u>1,053,589</u>	<u>17,51,809</u>	<u>15</u>	<u>0</u>

5. The said dust coal before sale converted into coke and after payment of all expenses of so converting the same, including loss in dust, the above-mentioned value of R4-4-6 is the profit per ton thereof.

6. The Company accordingly estimate as compensation for loss of said 1,053,589 tons of coal, coke, and rubble, the sum of R17,51,809-15-0.

7. The value of the surface of the said 42 bighas 16 cottahs and 4 chittacks of lands is R15 per bigha, and the Company accordingly claim the sum of R12,843-12-0 as compensation for the market value of all such lands.

8. The total compensation estimated and claimed by the Company in respect of the acquisition of their interest in the said land is the sum of Rs 17,64,653-11-0.

9. The Company reserve the right to claim compensation for any damage they may sustain through the interruption to roads, waterways, &c., which cannot be properly valued at present.

10. *The Company have set out in the second schedule hereto the detailed quantities of coal within the area of the lands to be acquired under notices referred to above. They value such coal at the sum of Rs 17,15,809-15-0. But as the Company may not be in a position to work such coal for some time, they are prepared to accept a lesser sum as compensation for loss of the same upon the condition that if the coal should hereafter be worked by the Railway or any Company, person, or persons, this Company shall be paid a royalty at the rate of 0-10-3 (ten annas and three pies) per ton on all coal raised from such lands.*

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Dated the 2nd July 1887.

Demi-official from—T. R. WYNNE, Esq., Agent, Bengal-Nagpur Railway Co.,  
To—D. W. CAMPBELL, Esq., Offg. Agent, East Indian Railway Co.

I am writing home to-day to my Board. Am I justified in saying—

(1) that you agree on behalf of the East Indian Railway to our junction being at Assansol ;

(2) that there will be no need to make any additions to the Assansol Station arrangements to enable our line to join yours there, except of course the necessary junction signal and crossing-roads arrangements, subject of course to any extension in the future required by the increase of traffic ;

(3) that the East Indian Railway will receive and despatch our English stores and materials on the same terms as they work for the Indian Midland Railway ?

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Dated the 2nd July 1887.

Demi-official from—D. W. CAMPBELL, Esq., Offg. Agent, East Indian Railway Co.,  
To—T. R. WYNNE, Esq., Agent, Bengal-Nagpur Railway Co.

In reply to your letter of date—

(1) I agree, subject to my Board's approval, to your junction being at Assansol.

(2) So far as can be seen at present, there will be no need to make any addition to the Assansol Station works to enable your line to join ours there, except such as are involved in the necessary junction arrangements. Probably additional sidings will be required for standing your stock on.

(3) I will recommend to my Board that our Controller of Stores should, in respect of the stores of your Company, clear Custom House, take delivery at ship's side, land at Howrah, load into wagons, and make over to the Traffic Department for despatch on the following terms :—

Rupees 2 per ton for all material except articles, packages, and cases, each weighing 10 cwt. and upwards, for which an extra charge of Re. 1 per ton will be made. One anna per ton extra will be charged per clerkage. These are the terms for the Indian Midland Railway.

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[ENCLOSURE No. 3 TO RAILWAY DESPATCH No. 38 OF 1888.]

No. 1067 C., dated the 14th November 1887.

From—The Consig. Engr. to the Govt. of India for Railways, Central Division,  
To—The Secretary to the Government of India, P. W. Dept.

I have the honour to forward the plans and estimates of the eastern extremity,

about 15 miles in length, of the Bengal-Nagpur Railway, connecting it with the East Indian Railway at Assansol.

2. The question of the route has been exhaustively discussed in previous correspondence ending with letter No. 466 of 11th July from the Agent and Chief Engineer, Bengal-Nagpur Railway, and with my predecessor's report No. 505 of 18th July. I may add that I entirely concur with the views therein set forth.

3. The gradients are heavy, but every pains having been taken by the Engineers, it may be accepted that better cannot be obtained, and the steepest grade is of frequent occurrence on the rest of the line.

The falling gradient of 1 in 150 into Assansol Station will call for careful driving, and perhaps for some special regulation by the Traffic Department, but need not be objected to.

4. I recommend these plans and estimates for approval and sanction, subject to slight modification hereafter, if found necessary, in the Damuda Bridge and the details of station requirements. I think the details of the Damuda Bridge may be left an open question until the trial borings are completed. Any change in the present proposal of ten spans of 200 feet would tend to reduce, and not increase, the present estimate.

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No. T—1, dated the 31st October 1887.

From—R. A. WAT, Esq., M.I.C.E., Supdg. Engr., Bengal-Nagpur Railway,  
Bengal Division,

To—The Agent and Chief Engineer, Bengal-Nagpur Railway Company.

#### ASSANSOL JUNCTION LINE.

I have the honour to forward herewith drawings and estimates of line proposed to connect this Railway with the East Indian Railway at Assansol; a small statement (marked A) is also added, showing the comparative cost of the more important items as between this line and Mr. Parker's line to Sitarampur.

The route adopted is that marked on the index map with a full red line, the dotted red line being that which Mr. Whitty selected somewhat hurriedly when called upon to show that a junction at Assansol was feasible. It is believed that the newer line is better in many respects than Mr. Whitty's, and the crossing of the river is narrower and more favourable.

The Sitarampur junction line is shown blue, and the black dotted lines represent the various proposals that have, from time to time, been made for effecting a junction with the East Indian Railway.

The Assansol line as now laid down leaves Mr. Parker's line at Kunjbehari, and keeping higher up on the country avoids most of the high drainage met with lower down on the Sitarampur route. Between Kunjbehari and the Damuda River, however, two well-defined nullas are crossed,—the Bishramjore, at chainage 90, bridged by three arches of 20 feet, and the Monkurajore, at chain 315, requiring four arches of 30 feet. Both of these have good rocky beds, and there will be little money spent in foundations; at chainages 144, 180, and 243, the line crosses a considerable amount of drainage, and openings of 3 spans of 20 feet have been adopted in each case. These may appear at first sight unnecessarily large; but as the whole country is dotted over with tanks, which in times of very heavy rain might burst their bunds and empty their waters suddenly into the valleys, a very ample provision is considered desirable.

Nowhere else is there any drainage crossed of any moment, and the culverts are mere outlets to very small pockets, and are in consequence themselves small.

For the Damuda River the crossing selected is most favourable. The whole of the east bank is one sheet of rock, and that abutment and two piers out of the nine will be founded without difficulty almost on the surface. The west abutment will

be on rock, 25 feet below the surface, while in the pier next to it, clay is struck at a depth of 50 feet. The boring for the intervening piers is being hurried on, but, except that the rock shelves rapidly towards the middle of the river, nothing definite is known. It is probable that the depth of foundations of the six piers remaining to be investigated will vary from 40 to 80 feet.

On the east bank, owing to the scarcity of soil and the very considerable height of the formation, it is proposed to build a short viaduct, 300 feet long, and it is believed that this will not be found more costly than a bank at this place.

The Damuda Bridge will consist of 10 spans of 200 feet steel girders arranged to carry a double line, if hereafter found necessary, the rails being carried on the top boom.

No drainage of any moment is crossed east of the Damuda, and only a few small openings are required. These will generally be arches, as the stone available is so good, but in two cases 20-foot girders have been adopted, as they will be in very wet ground.

*Gradients.*—In the matter of gradients this line is very similar to the Sitarampur line. The ruling gradient of 1 in 100 has been used without hesitation when any considerable saving could be effected by so doing; and, as will be seen by the estimate, the cost of earthwork for this, the longer line, will be less than estimated by Mr. Parker for the junction at Sitarampur.

*Curves.*—There are six curves on the line, of which four are of 5,000 feet radius and two of 3,000 feet; of the latter, one is at Assansol Station, where the formation joins that of the East Indian Railway, and the other is at Kunjbehari, where the Assansol line leaves Mr. Parker's original line.

*Materials.*—Stone of good quality for building purposes will be found throughout, and no brick will be used.

Material for ballast is plentiful, both broken stone and very excellent shingle. The cost of ballast will be low and the material excellent.

Lime kunkur and good clean sand are plentiful and inexpensive.

*Stations.*—A station has been arranged on the east bank of the Damuda, from which a siding would run through all the collieries in the neighbourhood. Considerable siding accommodation has been provided, and also engine-watering arrangements. The station building would be of the type originally proposed for Purulia, and the accommodation for staff ample. A site has been indicated as a convenient one for a station at the village of Morlia, 5 miles from Pachet and 5 miles from Damuda. This would be put in hereafter if found necessary.

*Cost.*—From an examination of the estimates submitted with this report, it will be seen that, although the Assansol line is longer by some 7,000 feet than the Sitarampur one, its cost is not greater. The saving in earth-work is caused by the line being very much lighter than that to Sitarampur, while in the item of bridging the comparison is only very slightly in favour of the Sitarampur line, although a higher rate for stone masonry instead of brick has been taken. The rates for well-sinking and girder erection on the Damuda Bridge have also been largely increased, and the weight of iron-work taken 25 per cent. higher than estimated by Mr. Parker.

The cost of permanent-way is approximately the same in the two cases, which is due to the extremely low rate at which contracts for rails have been let in England. Mr. Parker's estimate of the cost of sleepers, however, was probably much too low; the East Indian Railway pay Rs 4-8-0 at Parakar for a sleeper which Mr. Parker estimated to cost Re. 1-12-0, a difference of Rs 5,500 per mile, or Rs 88,000 for the whole 16 miles; no estimate is available of the actual cost of alterations necessary in the Assansol yard to effect a junction between the two Railways, but the plan submitted by the East Indian Railway of their proposals for junction arrangements will show how very slight and inexpensive these alterations will be, consisting, as they do, of the lengthening of two small bridges and the introduction of some cross-over roads in the yard. The Bengal-Nagpur Railway would join on to

an existing dead-siding, and with the exception of these cross-over roads, absolutely no alteration in the station-yard would be necessary.

At Sitarampur, on the other hand, the whole station would require remodelling, and this would be found a very costly business. The station is on broken ground and very cramped, and to make it a satisfactory junction station, a much larger sum must be spent than would be lost in land and works by abandoning the Sitarampur line.

There is hardly room for doubt but that in the matter of actual construction the Assansol junction line will be a much cheaper one than that to Sitarampur.

For the purpose of working a heavy through traffic, it will hardly be contended that a junction at Sitarampur, with running powers over the East Indian Railway to Assansol, would be a satisfactory arrangement; and if, furthermore, there is no economy of first cost in such an arrangement, it would appear that little remained to be said in its favour.

In order to serve the coal-fields thoroughly, and give the full benefit of the Railway, one or more branches must necessarily be thrown out; if the main line passes through one central group of collieries, as in the case of the Sitarampur junction line, a branch on either side would be necessary. In the proposed Assansol line the collieries are skirted, and one branch would run through them all. There can be little doubt as to which would be the better arrangement from a traffic point of view.

But the great argument against the Sitarampur junction is the enormous claims for mineral rights on account of land that would have to be met. That one Company alone should prefer claims, which they are prepared to substantiate, to the extent of 47 lakhs of rupees, is a fact which in itself might be considered sufficient to condemn the line, and it is nothing to the point to say that by the operation of the recent addition to the Land Act their claim is deferred. The existence of minerals below the railway of such value, and the working of which could not possibly be permitted, constitutes a liability which cannot be evaded, and which it would be sound policy to face at the beginning; and there is small doubt but that the adoption of the Sitarampur junction would lay up for the Railway Company a crop of such claims.

The question of mineral rights and their value on the Assansol alignment has been enquired into very carefully, both by the Engineers employed on the Survey and by the Deputy Collector for Land Acquisition; every available authority has been consulted, and nothing has been left undone by which a right conclusion may be come to in the matter.

The accompanying geological map will show that between Gungpur and Baltoria, the line passes through a coal-bearing area, and that one or two outcrops occur. These outcrops have been carefully examined and found to consist of a very inferior shaly coal, dipping more over (as also shown in the map) away from the railway; an attempt has been made to work these seams, which are nowhere more than 2' 6" in thickness, but it has long been abandoned, and there is but little doubt that, while on the one hand, they could not repay working, on the other, the working would not in any way affect the railway.

With the exception of this short length, the line nowhere passes through land on which the mineral rights are of value. The Managers of the various Coal Companies around Sitarampur, with the exception of the Manager of the Equitable Coal Company, state that the new alignment passes through lands on which the value of the mineral rights is considered to be *nil*.

The Equitable Coal Company are the lessees of the portion between Gungpur and Baltoria, and they would, no doubt, like to establish a high value for running rights over that area; but, as before stated, their value, great or small, is a matter of no concern to this Railway.

I have been unable to discover any argument in favour of the Sitarampur

route, which is not counterbalanced a hundred times over by arguments against it. I have gone carefully over the ground many times, and even were there no question of heavy compensation on the Sitarampur line, I should vastly prefer the other.

A.

BENGAL-NAGPUR RAILWAY.

*Assansol Junction Line.*

Comparative Estimates of *chief items* for Sitarampur and Assansol routes—

	Sitarampur route.	Assansol route.
	R	R
<i>Earth-work</i> . . . . .	2,78,974	1,91,584
<i>Major Bridges—</i>		
<i>Damuda</i> . . . . .	11,52,666	11,79,860
<i>Others</i> . . . . .	<i>Nil</i>	30,486
<i>Minor Bridges</i> . . . . .	1,35,180	1,16,351
<i>Ballast and Permanent-way</i> . . . . .	4,28,734	4,04,260
<b>TOTAL</b> .	<b>19,90,554</b>	<b>19,22,541</b>

BENGAL-NAGPUR RAILWAY.

*Assansol Junction Line.*

Abstract Estimate.

I.—Preliminary Expenses—	R
16 miles, at R400 per mile . . . . .	6,400
II.—Land . . . . .	45,920
III.—Construction of line—	R
(a) Earth-work . . . . .	1,91,584
(b) Bridge-work—	
i. Large bridges . . . . .	12,10,346
ii. Minor bridges . . . . .	1,16,351
(c) Tunnels . . . . .	<i>Nil</i>
(d) Level-crossings . . . . .	9,900
(e) Fencing . . . . .	<i>Nil</i>
(f) Temporary quarters . . . . .	2,500
	<b>15,80,681</b>
IV.—Ballast and Permanent-way—	
(a) Ballast . . . . .	72,340
(b) Sleepers . . . . .	1,60,000
(c) Permanent-way . . . . .	1,71,920
	<b>4,04,260</b>
V.—Stations and Buildings—	
(a) Station Offices . . . . .	10,474
(b) Workshops and Stores . . . . .	<i>Nil</i>
(c) Staff-quarters . . . . .	4,110
(d) Station Machinery . . . . .	13,200
	<b>27,784</b>
IX.—Contingencies at 5 per cent. . . . .	20,15,045
	1,00,752
<b>TOTAL</b> .	<b>21,15,797</b>

No. 62 (Railway), dated 7th June 1888.

From—The Secretary of State for India,

To—The Government of India.

Your Excellency's Railway letter No. 38, dated the 13th March 1888, reporting your proceedings in connection with the junction of the Bengal-Nagpur and East Indian Railway Companies' systems at Assansol, has received my consideration in Council.

Bengal-Nagpur Railway Company. Junction with the East Indian Railway at Assansol.

2. The grounds on which your Government had been led to prefer a junction with the East Indian Railway Company at Assansol in lieu of Sitarampur, as originally intended, are clearly sufficient, but it appeared to me that the compensation to the "Equitable Coal Company," as described in paragraph 19 of your letter, which seemed to imply a pledge to carry the coals of the Company free of charge over the branch line to their collieries, would have been unduly onerous, and I

\* Letter to Bengal-Nagpur Railway Company of 4th May 1888.

Ditto from ditto, No. 50 of 16th May 1888.

addressed the Board of the Bengal-Nagpur Railway Company on the subject. Copies of the communications\* which have passed between this Office and the Company are enclosed for your information, from a perusal of which you will learn that the Company view their obligations to the Coal Company in a different light,—namely, that no greater charge shall be made to the Equitable Company than to the Bengal Company for coals passing over the branch. Presuming, therefore, that a suitable charge will be made to both Companies, there seems to be no objection to the arrangement.

3. Subject, therefore, to this limitation, your proceedings are confirmed, though it is to be regretted that by the premature occupation of the land which was at first taken up and is now relinquished this complication should have arisen.

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[ENCLOSURES.]

## No. 1.

No. P. W. 671, dated India Office, London, 4th May 1888.

From—JULAND DANVERS, Esq.

To—The Managing Director, Bengal-Nagpur Railway Company.

I am directed to transmit herewith, for information of the Board of the Bengal-Nagpur Railway Company, copy of a despatch, and its enclosures, which have recently been received from the Government of India, in respect to the junction of the Company's system with the East Indian Railway Company at Assansol.

With reference to this letter, I am desired to say that Viscount Cross in Council, while agreeing with the Government of India in the selection of Assensol as the point of junction, desires to draw the attention of the Board to the arrangements in respect to the terms of compensation to the "Equitable Coal Company," as stated in the 19th paragraph of the Government of India letter, and to request the Board to be good enough to furnish this Office with any observations they may desire to offer on the subject, more particularly with reference to the precise signification attached to Clause 2 in respect to "no additional charge for freight," which appears to the Secretary of State, on the face of it, to be of rather an extensive scope.

## No. 2.

No. 50, dated the 16th May 1888.

From—The Managing Director, Bengal-Nagpur Railway Company,  
To—The Under-Secretary of State for India.

I have to acknowledge the receipt of your letter P. W. 671 of the 4th instant and its enclosures, respecting the junction of Company's system with that of the East Indian Railway Company at Assansol.

With regard to the terms of the compensation to the Equitable Coal Company as stated in paragraph 19 of the Government of India's letter No. 38, and more particularly the second clause of these terms, I am to point out that the terms, as agreed to by the Agent, and confirmed by the Board, are somewhat differently stated in a letter, No. 39 R. C. of 7th January, from the Secretary to the Government of India, Public Works Department, to the Consulting Engineer to the Government of India for Railways.

This letter communicates the sanction of the Government of India to the junction at Assansol, "on the understanding that the Bengal-Nagpur Railway Company will make the coal branch desired, will levy the same rate from all places on this branch, and will make certain sidings required by the Equitable Coal Company."

The obligation to "levy the same rates from all places on this branch" is, the Board would point out, less extensive than an obligation "that no additional charge for freight should be levied by the Bengal-Nagpur Railway Company on this branch mineral line."

The object of the obligation is to put the Equitable Coal Company on the same footing as the Bengal Coal Company, who have a coal-field about half-way up the branch, and the Board will see that this arrangement is carried out.

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## 4.—Madras Railways.

No. 139 (Railway), dated 10th September 1886.

From—The Government of India,

To—The Secretary of State for India.

With reference to the correspondence quoted in the margin, we have now the honour to forward for Your Lordship's approval a preliminary estimate of the cost of the proposed railway from Tirupati to Dharmavaram, a station on the Guntakul-Hindupur line, together with a report and other papers as noted at foot. It is expected that no great delay will occur in the submission of the regular estimates, which we have reason to hope will not exceed that forwarded herewith. This and the regular estimate are prepared with all reserve as to the period when, financially considered, the construction of this line will become practicable, and we do not desire to be considered as now touching upon that part of the question. This despatch concerns itself only with estimates from the point of view of the Public Works Department.

2. The location of this extension of the Cuddapah-Nellore State Railway begins at the termination of the Nellore-Tirupati section of that line close to the town of Tirupati (about 6 miles west of Renigunta station on the Madras Railway), and, passing by Chandragiri, Pakal, Peelair, Vayalpad, Chinna Tipsundrum, and Kadiri, ends at Dharmavaram, where it joins the Hindupur extension of the Bellary-Kistna State Railway.

Pakal, instead of Damalcheruvu, will be the junction station for the project hitherto called the Damacherla-Villupuram Railway; and Chinna Tipsundrum will serve sufficiently the town of Madanapalle, through which place it was originally intended to carry the line. This proposal was, however, dropped, as it was found that it would increase the length of the line by about 6 miles as compared with the more direct route between mile 62 and mile 83 now adopted; and the interests of Madanapalle are not so much greater than those of other towns in the neighbourhood as to warrant the outlay which would be involved by taking the more circuitous route.

3. The total length of the line selected is 166 miles, and the estimated cost Rs. 1,07,89,746, which is equal to a mileage rate of Rs. 65,000. The estimate includes a liberal provision for rolling-stock and general charges; and, considering the undulating nature of the country to be traversed, a mileage rate of Rs. 65,000 is very moderate. But as the traffic to be carried on this line is not expected to be very great, a high standard of completion of the works will not be necessary for many years to come, so we are disposed to accept this mileage rate as fairly representing what the line may be expected to cost at the outset, and it should be sufficient to put the line into a condition to meet any calls on it for famine protection purposes.

4. Your Lordship will observe that, in these estimates, the cost of English stores has been placed at 1s. 6d. to the rupee. Although exchange is at present below this rate, we have not deemed it necessary to submit revised figures, as they might prove equally useless at the time when actual construction of the line is undertaken. The effect of a fall in exchange, we may remark, necessarily enhances the sum in rupees to be provided to meet the cost of stores purchased in England, but produces, on the other hand, a reduction in the sterling price of such stores and also in the amount of capital, raised in sterling, required to meet the outlay in India.

5. As we have now received preliminary information regarding the Pakal-Villupuram project, this occasion seems opportune for presenting to Your Lordship a brief review of the complete scheme which we have devised for meeting the requirements of those districts of Madras which suffered so severely from famine in 1875-76—requirements to which Lord Hartington, in a Despatch, No. 121 R., dated 7th September 1882, suggested that attention was probably needed. At the same time, we are fully aware that existing financial circumstances preclude us from anticipating any early prosecution of those portions of the system which have not yet been begun.

This scheme consists of two portions. The one which was brought forward in Schedule A accompanying our Despatch No. 29 (Finance and Commerce) of 23rd January 1883 is now in progress; the other, which was added to that Schedule by our Despatch No. 27 of 29th January 1884, has not yet been commenced. Both, again, have been distinguished in paragraph 6 of our Despatch No. 264, dated 22nd September 1885.

6. The entire scheme (except the minor lines), together with the connection

Names of project.		Miles	Estimated cost.	Rate of exchange.
			R	s. d.
IN PRO- GRESS	Guntakul-Bezawada .	279	1,88,00,000	1 8
	Nellore-Tirupati .	83	60,87,823	Actuals
NOT BEGUN	Guntakul-Hindupur .	111	65,48,000	2 0
	Tirupati-Dharmavaram .	166	1,07,89,000	1 6
	Pakal-Villupuram .	135	76,85,000	1 6
	Minor Lines .	150	80,00,000	2 0

of it with the Mysore Railways by a short line of 41 miles in length and mostly in Mysore territory, is shown in an index map which accompanies this despatch. The length and estimated cost of the several portions are detailed in the margin. The four

projects first named have now been submitted to the Secretary of State; that from Pakal to Villupuram will shortly be so; the selection from numerous proposals for the minor lines which are under investigation has not yet been completed.

7. The operation of the scheme for protective purposes may be briefly described. The Guntakul-Bezawada line will bring the supplies of the irrigated Kistna delta into the heart of the Cuddapah and Bellary districts, which have been repeatedly devastated by famine. From Guntakul these, together with other supplies brought from the north by the Madras Railway, will be carried by the Guntakul-Hindupur extension into the Anantapur district. Again, the Nellore-Tirupati-Dharmavaram line will convey supplies from the irrigated Pennar delta, and also sea-borne grain brought from Madras to Tirupati by the Madras Railway, up into the Peelair, Madanapalle, Rayachoti, and Kadiri taluks—a tract shut off from the Madras Railway by a range of hills, and probably stricken more severely in the last famine than any other. The connection of this line with the Guntakul-Hindupur at Dharmavaram will enable famine relief from the north to come down, or from the south to pass up, according to whichever source of supply may from time to time happen to be the more abundant. Finally, the Pakal-Villupuram line will receive its supplies from the same two sources at Pakal and Vellore respectively and distribute them to the Chitor, Punganur, Arni, Tiruvanamalai, and adjacent tracts.

8. It is, perhaps, unnecessary to consider definitely at the present time the agency by which the uncommenced lines might be constructed and worked, but the fact that they will be on the metre gauge, and their obvious dependence on Madras and its Government for supplies and regulation in time of famine, would seem to indicate that, at least, the Tirupati-Dharmavaram and Pakal-Villupuram

lines, together with the Nellore-Tirupati line approaching completion, and possibly the two northern lines also, should be combined with the South Indian Railway as one administration.

9. With regard to the traffic which these Madras lines are likely to attract, much difficulty has been experienced in obtaining any statistics likely to be of ultimate value, because the traffic in landlocked and comparatively inaccessible localities has hitherto been small, and a railway is certain entirely to alter the routes and conditions of local trade. We append, however, certain Proceedings of the Madras Government, comprising a report on internal road traffic registration, and are in hopes that further and more complete information may be forthcoming hereafter.

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No. 85 (Railway), dated 30th September 1886.

From—The Secretary of State for India,  
To—The Government of India.

I have received Your Excellency's Railway letter, No. 116 of the 23rd July 1886, submitting for sanction revised abstract estimates, amounting to Rs1,88,00,000 for the Bellary-Kistna State Railway, which now includes the short extension from Guntur to the River Kistna opposite to Bezawada.

2. This railway was sanctioned by Lord Kimberley in his Railway Despatch of 4th October 1883, No. 120, at an estimated cost of Rs1,77,50,000, and the approval of the Secretary of State in Council was given to the revised estimates, amounting to Rs90,38,053, for the two first divisions from Guntakul eastward, in Lord Randolph Churchill's Railway Despatch of 16th July 1885, No. 86.

3. The most formidable part of the line occurs in the second division, where the climate also adds to the difficulties of construction and impedes progress. I observe by the report of your Director General that it will probably take two more seasons to complete it, and that operations in the Cumbum and Guntur divisions, up to the Kistna, are at present confined to those districts in which heavy works occur, their execution being regulated so that these sections may be ready for platelaying when the tunnel and ghât works in the preceding division are completed.

4. The cost of the two last divisions, for which estimates are now submitted, is given at Rs58,01,764, being at the rate of Rs37,674 per mile, exclusive of rolling-stock. This compares favourably with the first and second divisions, where the mileage cost is estimated at Rs49,707 and Rs1,27,143 respectively. The total estimated cost of the entire line, including rolling-stock, now amounts to Rs1,88,00,000, which is approved, subject to any modifications that may be necessary in consequence of the fluctuations in the rate of exchange. The prosecution of the work must, of course, depend on the funds that can be made available for the purpose.

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No. 101 (Railway), dated 25th November 1886.

From—The Secretary of State for India,  
To—The Government of India.

Your Excellency's Railway letter No. 139, dated 10th September 1886, furnishes information respecting a system of railways mainly intended for famine protective purposes, which it is the desire of your Government to eventually construct in the Madras Presidency.

2. This system, as set forth in your letter, provides for a total additional

	Miles.
* Guntakul-Bezswada . . .	279
Nellore-Tirupati . . .	83
<b>TOTAL</b> . . .	<b>362</b>

	Miles.
† Guntakul-Hindupur . . .	111
Tirupati-Dharmavaram . . .	186
Pakal-Viluparam . . .	135
Minor lines . . .	150
<b>TOTAL</b> . . .	<b>582</b>

railway mileage of 924 miles in the Madras Presidency, of which 362 miles, as shown in the margin,\* is now in course of construction. For the remaining 562 miles,† complete estimates for which are in course of preparation, an expenditure of about Rs. 40,33,000 will be required, and till the funds at your disposal enable you to prosecute these works, either separately or conjointly,

it is superfluous to make any further observations, except that I entirely approve of the preliminary steps which your Government have taken in this important matter. I learn, from a recent communication from the Board of the South Mahratta Railway Company to their Agent in India, that that officer has been directed to ascertain from your Government whether you would be disposed to entrust the construction of the lines from Guntakul to Bezswada and to Hindupur to the agency of that Company, the capital being provided by means of debentures to be raised by them at the rate of  $3\frac{1}{2}$  per cent., and under the general conditions of their contract with Government. It is unnecessary to do more than refer to my Railway Despatch No. 85 of 30th September 1886, as to the prosecution of the Bezswada line, and as respects the Hindupur extension it will be for your Government to consider whether such an arrangement would be advisable in the present circumstances of the Company, and I request that you will report your conclusions for my information.

No. 4 (Railway), dated 11th January 1887.

From—The Government of India,

To—The Secretary of State for India.

We have the honour to acknowledge Your Lordship's Railway Despatch No. 101 of the 25th November 1886, in paragraph 2 of which we are requested to report our conclusions on a proposal from the Board of the Southern Mahratta Railway Company to take over the construction of the lines from Guntakul to Bezswada and to Hindupur; the capital being provided by means of debentures to be raised by them at the rate of  $3\frac{1}{2}$  per cent. and under the general conditions of their contract.

2. In consequence of the reference from the Company's Agent in India to which Your Lordship refers, the matter was discussed fully in all its aspects with the Madras Government and its officer by the Hon. Sir Theodore C. Hope on his recent visit to that Presidency. A Minute approving the expediency of the transfer to the Southern Mahratta Railway Company of the whole Bellary-Kistna Railway, including its extension to Hindupur, was recorded at a Conference held at Madras on the 16th November last under the Presidency of His Excellency the Governor.

3. From an administrative point of view, there appear to be considerable advantages, both ordinarily and in time of famine, in working the traffic on the Bellary-Kistna under the same management as the Southern Mahratta Railways, while the latter, being now only  $1,059\frac{1}{2}$  miles long, would not be embarrassed by the addition of the 279 miles, from Guntakul to Bezswada, or even of 152

		Miles.
Guntakul to Hindupur	: :	111
Hindupur to Tumkur	: :	41
	TOTAL	<u>152</u>

contract with the Mysore State, would involve. The Company's very efficient superior staff, under Colonel Lindsay, would have no difficulty in undertaking the completion of the Bellary-Kistna Railway in addition to their Mysore Section and Western Deccan completion now in hand.

		Lakhs.
* Guntakul to Hindupur	: :	188½
Hindupur Extension	: :	8½
	TOTAL	<u>142</u>

and the avoidance of the future raising of some 115 lakhs by the State direct, in order to complete the line, would, under present circumstances, be convenient.

We consider, however, that the time when the Hindupur extension is to be proceeded with should be reserved in the sole discretion of the Secretary of State by means of a clause following clause 57 of the Indian Midland Railway Company's contract and similar precedents.

5. The terms proposed by the Company for raising the necessary funds appear to us to be reasonable.

Telegram No. 2 B.C., dated 3rd January 1887.

From—Calcutta, Viceroy,  
To—London, Secretary of State.

Your Railway Despatch No. 101, dated 25th November last. We approve of proposal to transfer Guntakul-Bezawada line to Southern Mahratta Railway on terms proposed, and would deal with Hindupur Extension by clause similar to 57 of Indian Midland Railway contract.

6. The arrangement proposed being thus in our opinion desirable, we think that the sooner it is carried out the better. We therefore forwarded, on the 3rd instant, the telegraphic message quoted on the margin, and now write to confirm the same.

No. 24 (Railway), dated 1st February 1887.

From—The Government of India,  
To—The Secretary of State for India.

With reference to previous correspondence on the subject, ending with Lord Kimberley's Railway Despatch No. 65 of the 29th July 1886, we have now the honour to transmit, for Your Lordship's consideration and orders, a revised abstract estimate of the cost of constructing the Hindupur Extension of the Bellary-Kistna State Railway, 111 miles in length.

2. The estimate submitted with our Railway Despatch No. 81 of the 4th June 1886 worked out to Rs58,79,571, or Rs52,969 per mile, but omitted outlay on Establishment, Rolling-stock, Plant, and Workshops; adding sufficient for these items the mileage rate would have amounted to about Rs64,000. In the opinion of our Consulting Engineer, however, some items were capable of reduction, and taking the exchange at the conventional rate of two shillings per rupee, we placed the total estimate at Rs65,49,000 or Rs59,000, per mile.

3. An abstract of this estimate subsequently received from the Madras Government, revised to accord with a rate of exchange of one shilling and sixpence per rupee, and providing to some extent for the items omitted, worked out to a total of Rs76,68,338, or Rs69,082 per mile. It contained, however, an incorrect charge

for "Electric Telegraph" amounting to Rs. 11,250, the greater portion of which should not have appeared, as the only charge under that head to the Capital cost of a railway is rent and maintenance during the period of construction.

4. On receipt of Lord Kimberley's Despatch above quoted, in which His Lordship desired that complete estimates should be furnished before his sanction was accorded, we addressed the Government of Madras and called for a further estimate revised in accordance with the views that had been expressed by our Consulting Engineer which had been communicated to that Government. We have now to lay before Your Lordship the outcome of the revision made in accordance with those instructions, and supplemented by the experience since gained in estimating for Railways in the Madras Presidency. The figures have been further re-examined and revised by the Director General of Railways and our Consulting Engineer, and we believe they now represent a fair approximation to what the line will cost if constructed under ordinary circumstances. The abstract we now submit, and to which we ask Your Lordship's general sanction, totals to Rs. 75,25,000, or Rs. 67,792 per mile, which, allowing for difference in rate of exchange, is nearly the same as the amount of the estimate previously submitted to Lord Kimberley.

### BELLARY-KISTNA STATE RAILWAY.

#### HINDUPUR EXTENSION—111 MILES IN LENGTH.

#### *Revised Abstract Estimate of cost of construction.*

MAIN AND MINOR HEADS.	Minor Heads.	Main Heads.	Per mile, Minor Head.	Per mile, Main Head.
	₹	₹	₹	₹
I.—Preliminary Expenses . . . . .	...	1,11,000	...	1,000
II.—Land . . . . .	...	55,500	...	500
III.—Construction of Line . . . . .	...	26,59,648	...	23,960
1.—Earth-work . . . . .	8,15,406	...	7,346	...
2.—Bridge-work—				
(a) Small bridges . . . . .	17,45,961	...	15,729	...
(b) Large " . . . . .		...	...	...
3.—Tunnels . . . . .	...	...	...	...
4.—Level-crossings . . . . .	48,125	...	433	...
5.—Fencing . . . . .	33,300	...	300	...
6.—Electric Telegraph . . . . .	16,866	...	151	...
IV.—Ballast and Permanent-way . . . . .	...	24,97,500	...	22,500
1.—Ballasting . . . . .	2,77,500	...	2,500	...
2.—Permanent-way . . . . .	22,20,000	...	20,000	...
V.—Stations and Buildings . . . . .	...	5,38,905	...	4,855
VI.—Plant . . . . .	...	2,19,447	...	1,977
VII.—Steam Ferries . . . . .	...	...	...	...
VIII.—Rolling-stock . . . . .	...	9,88,000	...	8,000
IX.—Establishment . . . . .	...	5,55,000	...	5,000
TOTAL . . . . .	...	75,25,000	...	67,792

No. 15 (Railway), dated 10th February 1887.

From—The Secretary of State for India,

To—The Government of India.

In forwarding for Your Excellency's information a copy of a letter \* which the Directors of the South Indian Railway Company have addressed to their Agent in India, relative to the working by the Company of the Nellore-Tirupati State Railway, and also to the construction and working of other proposed

\* No. 639 of 14th January 1887.

State lines, I desire to draw your particular attention thereto, and at the same time to state that I shall be glad to be favoured with the opinions and recommendations of your Government on the Board's proposals.

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No. 639, dated London, the 14th January 1887.

From—HENRY W. NOTMAN, Esq., Managing Director, South Indian Railway,  
To—WM. S. BETTS, Esq., Agent, South Indian Railway Company, Trichinopoly.

The Directors understand that it might probably meet the views of the Government were this Company to undertake the working of the Nellore-Tirupati State Railway, 83 miles in length, which will, it is believed, be ready for opening in April next. The Directors desire that you will intimate to Government their readiness to undertake this work on terms to be arranged, which might, it is thought, be similar, *mutatis mutandis*, to those proposed for the working by the Southern Mahratta Company of the Guntakul-Nundial section of the Bellary-Kistna State Railway, of which you are already in possession of a copy.

2. The Directors have reason further to believe that Government has had under consideration the question of entrusting to this Company the construction, as well as the working, of certain State Railways projected in the immediate vicinity of their system.

Should this be the case, the Board would be prepared, should the Government see fit to place the work in their hands, to undertake the construction of the lines from—and to raise the necessary funds for this purpose on terms to be settled—

1. Tirupati to Dharmavaram—166 miles.
2. Pakal Junction to Villupuram—135 miles.

3. The estimated cost of these two lines is, it is stated, 108 lakhs and 77 lakhs respectively, or with the rupee at 1s. 6d., £1,387,500.

Should the course indicated be followed and the construction of these lines be handed over to the Company, to whose system they would, when completed, form valuable feeders, a saving to the State would be effected in the outlay upon large workshops and plant, for the maintenance of rolling-stock which would otherwise be necessary, and in the expense of a separate supervising establishment, as the staff of the Company would with small increase, and that principally in the subordinate grades, be sufficient for the work.

No delay in commencing operations need occur after terms are agreed upon, as the organisation of the Company is complete and the works could be proceeded with at once.

Should the Government of India, in reply to the references which you are now empowered to make to them, manifest a desire to employ the agency of this Company for any of the objects mentioned in this letter, the Board will, on hearing from you to that effect, place themselves in communication with the Secretary of State, in view to the early settlement of terms.

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No. 24, dated 10th March 1887.

From—The Secretary of State for India,  
To—The Government of India.

Your Excellency's Railway letters Nos. 4 and 24, dated 11th January and

## PROTECTIVE RAILWAYS.

1st February 1887, respectively. in respect to the Guntakul-Bezawada and the Guntakul-Hindupur Railways, have received my consideration in Council.

2. With the latter of these two letters you submit a revised abstract estimate of the cost of constructing the Guntakul-Hindupur section of the Bellary-Kistna Railway, amounting to ₹75,25,000, while in the former letter you suggest that both the lines in question—namely, that from Guntakul to Bezawada and that from Guntakul to Hindupur—should be handed over for construction and working to the Southern Mahratta Railway Company, the necessary capital being raised by that Company by the issue of  $3\frac{1}{2}$  per cent. debentures, and under the general conditions of their contract with Government.

3. This necessary capital amounts, according to the information afforded by your Railway letter No. 116 of 23rd July 1886, to ₹1,88,00,000 for the Guntakul-Bezawada line, and, according to your present letter No. 24 of the 1st February 1887, to ₹75,25,000 for the Guntakul to Hindupur line, thus making a total of ₹2,63,25,000. This total does not correspond with paragraph 4 of Your Excellency's Railway letter No. 4, dated 11th January 1887, by which it might be inferred that ₹2,57,00,000 represents the total capital cost of the Guntakul-Hindupur line. The reference made in that paragraph to the outlay of 142 lakhs on the line is not borne out by any previous information which has reached this office, and is probably a mistake, being intended to refer to the Guntakul-Bezawada line, on which it is known that active operations are in progress.

4. These points, however, do not seriously affect the main issue,—*viz.*, the proposal made by your Government that the lines in question should be entrusted, under certain conditions, to be completed and worked by the agency of the Southern Mahratta Railway Company, with respect to which I would observe as follows.

While fully recognising the administrative convenience and economy which might be looked for from such an arrangement, the present time, when the Bengal-Nagpur Company has just issued a capital of 3,000,000*l.* and a sum of 2,660,000*l.* is required for the renewal or fresh issue of debentures by various existing companies, would be very inopportune for making an arrangement with the Southern Mahratta Railway Company for raising the money required for the lines in question. For the present, therefore, the financial part of the arrangement cannot be entertained, and the expenditure on further construction works must be regulated by the means at the disposal of your Government; but, as regards the question of management, you will have learnt that the Southern Mahratta Railway Company have entered into an agreement for working the Guntakul-Nundial section of the Bezawada line for a year, as proposed by your Government.

I am willing to accord my sanction, on the information now supplied, to the revised estimate of cost of constructing the Guntakul-Hindupur Railway being fixed at ₹75,25,000.

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No. 65 (Railway), dated 15th March 1887.

From—The Government of India,

To—The Secretary of State for India.

We have the honour to acknowledge Your Lordship's Railway Despatch No. 15, dated the 10th February 1887, forwarding, for our information, a copy of a letter which the Directors of the South Indian Railway Company have addressed to their Agent in India relative to the working by the Company of the Nellore-Tiraputi section of the Cuddapah-Nellore State Railway, and also



to the construction and working of its uncommenced sections, and while drawing our particular attention thereto, asking to be favoured with our opinions and recommendations.

2. In reply, we have to inform Your Lordship that, having in view the probability of some such offer being made by the South Indian Railway Company, the matter was discussed fully in all its aspects with the Madras Government and its officers by the Hon. Sir Theodore C. Hope, on his visit to that Presidency in November last. A Minute approving of the expediency of working the Cuddapah-Nellore Railway by the South Indian Company, and noting, as very desirable, the acquisition by that Company of this line and its extensions from Tirupati to Dharmavaram and Villupuram to Pakal, was recorded at a Conference held at Madras on the 16th November 1886, under the presidency of His Excellency the Governor, and with the opinions therein expressed we are quite in accord.

3. The arrangement was foreshadowed in paragraph 8 of our Railway Despatch No. 139 of the 10th September 1886, and from an administrative point of view it appears to us highly desirable, as it would cheapen the working of the South Indian Railway Company, keep its staff better employed, and spread the general superintendence over a much-extended area. Some considerable economy would also doubtless be obtained in the large outlay upon workshops and plant.

4. The estimated cost of the lines under discussion is as noted on the margin, and were the Cuddapah-Nellore acquired by the South Indian Railway Company, an immediate refund of fully 61 lakhs would be obtained. The estimates for the two uncommenced sections were submitted to Your Lordship under our

	Miles.	Cost. R
Completed—		
Nellore to Tirupati	. 83	60,87,823
Uncommenced—		
Tirupati to Dharmavaram	. 166	1,07,89,000
Pakal to Villupuram	. 135	93,97,600
<b>TOTAL</b>	<b>. 2,62,74,233</b>	

Railway Despatches No. 139 and No. 41 of the 10th September 1886 and the 8th March 1887, respectively. The construction of these extensions, however, would stand over for consideration hereafter, whenever the financial situation permitted; and as regards them, we recommend, as in the parallel case of the Bellary-Kistna Railway, that the time when their construction is to be proceeded with should be reserved in the sole discretion of the Secretary of State by means of a clause following clause 57 of the Indian Midland Railway Contract, and similar precedents.

The general terms for the working of the Cuddapah-Nellore section by the South Indian Railway have been arranged, and we are expecting the formal agreement for ratification at an early date in view of opening for public traffic in April next.

*Extracts from Notes of a Conference held at Guindy Park on 16th November 1886.*

PRESENT:

HIS EXCELLENCY THE GOVERNOR OF	HON. H. C. STOKES.
MADRAS.	GENERAL HANCOCK, R.E.
HON. SIR THEODORE C. HOPE.	COLONEL C. J. SMITH, R.E.
HON. C. G. MASTER.	COLONEL PENNECUICK, R.E.
HON. E. F. WEBSTER.	

\* \* \* \* \*

2nd.—That the Cuddapah-Nellore Railway as now under construction might be very suitably given to be worked by the South Indian Railway Company.

*3rd.*—That the acquisition by that Company of the line under construction, and its extensions from Tiraputi to Dharmavaram and Pakal to Villupuram, on a basis similar to that suggested by the Southern Mahratta Company in the case of the Bellary-Kistna is very desirable.

\* \* \* \* \*

No. 41 (Railway), dated 8th March 1887.

From—The Government of India,

To—The Secretary of State for India.

In continuation of our Railway Despatch No. 139 of the 10th September 1886, we have the honour to submit herewith a letter from the Government of Madras, Public Works Department, No. 905R. of the 6th December 1886, covering a report and estimate of the Pakal-Villupuram Railway, together with a note thereon by the Consulting Engineer for Railways, Madras.

2. The estimate, as submitted by the Government of Madras, totals to **₹85,77,259**, which, on the length of  $134\frac{1}{4}$  miles, gives a mileage rate of **₹63,771**.

3. The plans and estimates have been considered by our Director General of Railways and by our Consulting Engineer, and we attach copies of their notes for Your Lordship's information.

4. Our Director General of Railways, on the information before him, is disposed to consider the estimate as too low, and pending a revision of the estimate by the Government of Madras in the light of the criticisms which the project has now undergone, he would put its probable cost at **₹70,000** per mile, or a

\* Outlay in England converted at 1s. 6d.

total of **₹93,97,500**.\* The revised and fuller estimates referred to in the notes of our Director General of Railways will be called for and will be sent on to Your Lordship hereafter should they on receipt appear to merit any particular notice.

5. With the estimates for this section of the Madras famine lines we also forward, for Your Lordship's consideration, a letter from the Government of Madras, No. 779 R. of the 19th October 1886, covering a note, with map, on the construction of Protective Railways in the Ceded Districts.

6. Your Lordship has now before you in this and our other despatches quoted on the margin† full estimates of the three extensions‡ of the main lines in the Madras Presidency for famine protection purposes which have not yet been begun, and which, with the minor lines to be taken up afterwards, form the unfinished portion of the complete scheme explained in paragraphs 5 to 7 of our Railway Despatch No. 139 of 10th September last. We may here repeat the remark made in the first paragraph of that letter, that these estimates are submitted with all reserve as to the period when, financially considered, the construction of this extension will become practicable, and we do not desire to be considered as now touching on that part of the question.

† No. 139 Railway of 10th September 1886.

No. 24 Railway of 1st February 1887.

‡ Guntakul-Hindupur.  
Tirupati-Dharmavaram.  
Pakal-Villupuram.

No. 779 R., dated 19th October 1886.

From—COLONEL C. J. SMITH, R.E., Joint Secy. to the Govt. of Madras,  
Public Works Department, Railway Branch,

To—The Secretary to the Government of India, Public Works Department.

In continuation of my letter No. 205R., dated 11th March 1886, I am

directed to forward, for the earnest consideration of the Government of India, a note by the Officiating Director of Revenue Settlement and Agriculture, on the pressing necessity for protective railways in the Ceded Districts.

2. I am to state that His Excellency cannot view without alarm any further postponement of the construction of the lines in this Presidency which offer the only protection possible against a recurrence of the calamities of 1876-77.

3. Some years have already elapsed since the famine protective policy of the Government was adopted, yet, as Mr. Price shows, the portion of this Presidency most liable to drought is in a position but little, if at all, better than it was in 1876.

4. The yearly loss of revenue, considerable as it is, still continues; and, if only to save still greater financial embarrassment hereafter, His Excellency trusts that, whatever may be the arrangements necessary to meet present exigencies, they may include provision sufficient to meet the interest on the capital outlay required for the famine protective lines in this Presidency.

*Note by J. F. PRICE, Esq., on the construction of Protective Railways in the Ceded Districts.*

Of all the famines that have visited the Madras Presidency since it passed into the hands of its present rulers, that of 1876-1878 was the most severe, extensive, and costly to the State. It included, more or less, 14 districts out of 21 into which the Presidency was then divided. This area comprised 83,000 square miles, with a population of very nearly 20 millions.

The mortality consequent upon the famine is variously set down at from  $2\frac{1}{4}$  to  $3\frac{1}{2}$  millions of people. The Famine Commissioners remark (page 211, Part III, Report) that  $3\frac{1}{2}$  millions of the population appear to have been missing in 1881. This observation is based upon the figures given for the census of 1871 and that of 1881. In the former of these the numbers returned were, no doubt, under the mark, while those of 1881 were far more accurate. It may, therefore, be fairly assumed that an estimate of a loss of life, to the extent of  $3\frac{1}{2}$  million souls, is not an inordinate one. To this has to be added the decrease of population, caused by a diminished birth-rate, continued over a period subsequent to the famine. An idea of this figure may be formed from the fact that the average rate per mile of the fourteen districts which suffered, was for the year 1878 8'8, as compared with a mean ratio of 20'0, and that for the Ceded Districts it was 4'2. The great mortality of children during the famine, coupled with the very low birth-rate which existed at the same period, will, in years to come, appreciably affect the increase of population.

It is difficult to estimate, with any approach to certainty, what the loss of cattle, owing to the famine, was. No account of mortality under this head was kept during this epoch. Such statistics as are available are not quite reliable; but Mr. Benson, then Acting Superintendent of Government Farms, in paragraph 111 of his Annual Report for 1881, estimated the figure at  $1\frac{1}{2}$  millions head of cattle and two millions of sheep and goats, valued at 200 lakhs of rupees,— remarking, at the same time, that this estimate, which was based on the accounts up to June 1877, did not refer to the whole period of the famine or make allowance for the terrible after-deficiency in young stock. The

customs returns show that the increase in the export of hides, during the three famine years, as compared with the three preceding them, was 2,450,000 : allowing that one million of these came from Mysore, which is no doubt a figure considerably above the mark, and supposing that the hide of every animal, which died in consequence of the famine, was exported, which certainly was not the case, Mr. Benson's estimate seems to be too moderate. It might probably be with safety doubled. The loss in sheep and goats, which in some places were all but exterminated, could hardly have been much short of 4 millions.

Mr. O'Connor, in his review of the Trade Returns of 1877-78, calculates that the abnormal mortality of cattle for that year alone was 2 millions, and observes (page 26) : " When we consider that even the normal mortality is far in excess of what it ought to be, it would be difficult to exaggerate the blow to the agricultural prosperity of the country which these figures imply."

The close of the famine, owing to the restriction which then existed against the throwing up of land upon which arrears of revenue were due and the great disorganisation of the village system, occasioned by the calamity through which the people had passed, was not the period which showed the greatest falling off in the occupation of land. The removal, in 1879, of the restriction above alluded to, was speedily followed by a decrease, in two years alone, of no less than 2,337,000 acres in the occupied area ; and though there has since been a recovery, there was still, at the close of the revenue year 1884-85, a total decrease of 583,000 acres in the occupied area, as compared with the year prior to the commencement of the famine.

The actual expenditure on account of the famine of 1876-1878 was, up to the 31st July 1886, 697½ lakhs of rupees, and up to March 1880 the loss of revenue from all sources was estimated at 191 lakhs of rupees. The Famine Commissioners, in their report, remark that the total loss entailed by the Madras Famine could not be less than 8½ millions sterling—a figure evidently arrived at by adding together the actual cash expenditure up to date, and the estimated falling off of revenue. The Commissioners did not here take account of the immense loss involved to the State by the check to the general prosperity of the country, caused by the famine, or of that entailed upon the people by the death of thousands of cattle, and by having, in order to supply themselves with food, to sell, for much below their value, their jewels and other personal property. Jewels, the outward and visible sign in Indian agricultural life of a well-to-do condition, had at the close of the famine almost entirely disappeared in those districts which had suffered severely. What, when all the factors mentioned above are taken into consideration, the total loss to the State and people was, it is difficult to say, but it does not seem an error in the direction of over-estimate to put it down at 14 millions sterling.

The area upon which the Madras Famine fell with the greatest intensity was that known as the Ceded Districts, comprising what was, in 1876-1878, the Bellary district, now divided into those of Bellary and Anantapur, and, in addition, the Kuddapah and Kurnool districts. The Famine Commissioners (page 86, Part II of their Report) remark of this region : " It is here that famine has always been most severe." It covers 27,000 square miles of country. Its population in 1871 was returned as 3,978,000 : in 1881, over 800,000 of this number were missing, and as, by that time, all famine wanderers, who had survived the privations to which they had been exposed,

Decrease of cultivation  
owing to the famine.

Cost of the famine.

Ceded Districts, the area  
upon which the famine fell  
most severely.

had, no doubt, returned to their homes, this figure can safely be taken as representing the direct decrease of population within this area occasioned by the famine. The loss of cattle, taking the figures of the quinquennial returns of the period ending 30th June 1872, and comparing them with those for the official year ending 31st March 1878, was 730,000 head, or nearly  $\frac{3}{4}$  million. The expenditure due to the famine, in this area alone, amounted to 268 lakhs of rupees.

The area of land occupied in the Ceded Districts showed a steady decrease from the beginning of the famine, until in Fasli 1291 (1881-82) the culminating point was reached, and the occupied area of that year exhibited as compared with that of Fasli 1285 (1875-76), a decrease of 959,000 acres. Since then there has been a slow improvement, but at the end of Fasli 1294 (1884-85), the decrease, as compared with Fasli 1285 (1875-76), was still 828,000 acres,—an area representing a loss in way of assessment to Government of, in round numbers, 5 lakhs of rupees. This appears to evidence that agricultural recovery from the famine is, in this tract, not complete or nearly so.

The Ceded Districts, as will be seen from the index maps facing page 23, Part I of the Famine Commissioners' Report, from the account given at page 71 of the replies of the Board of Revenue to Chapter I of the Famine Commissioners' questions, and from the Bellary Manual, pages 73-76, form a tract which has wholly, or in part, suffered during all the noteworthy famines which have visited this Presidency during the present century, *viz*, in 1803, 1824, 1833, 1854, 1866, and 1876. A large portion of it was again, at the end of 1885, on the verge of famine.

This area, which from its peculiar position, situated as it is in great part in the centre of the Presidency, and embracing the whole of the zone not adequately reached by either monsoon, is constantly liable to a deficient rainfall, and therefore must always be exposed to drought. With the sole exceptions of the Cumbum tank in the Kurnool district, the Tungabhadra channels in Bellary, and the canal which passes through the Kurnool district and a small portion of that of Cuddapah, it can boast of no irrigation works worthy the name. Here and there are to be found fairly-sized tanks, but the vast majority of this class of works are small and shallow reservoirs, incapable of holding a decent supply of water, and of no use whatever in times of famine.

Schemes for the protection of appreciable portions of the Ceded Districts have, from time to time, been put forward, but the outlay which it was found that they would involve—in one case over a million sterling—and other difficulties have resulted in their being abandoned. It is agreed, by all those best able to judge, that the protection of the Ceded Districts from famine by means of irrigation works is, owing to financial and other considerations, for the present at any rate, quite impracticable. Possessing as they do, within the large extent covered by them, no protected area, which can in time of real famine do more than provide for itself a comparatively speaking small surrounding patch of country, they must of necessity, when home-stocks are exhausted and the real pinch of famine manifests itself, become dependent upon without for their supplies of food. If the transport of these is not efficiently and fully provided for in times of comparative plenty, such as the present, the horrors and misery which those who passed through the midst of them still shudderingly remember will be

repeated when the droughts, which no human power can avert, and which experience shows reappear at no very distant periods, recur, as they most assuredly will.

The physical character of the Ceded District is, in some ways, peculiar. In parts, especially in a large portion of the district of Cuddappah, it is cut off from the valley through which the Madras Railway runs by chains of lofty hills, traversable, at only rare intervals, by passes with high gradients which, where capable of improvement at all, are so only at a very large expenditure. In others the country consists of vast plains of black regur-soils, the roads through which, though in the fine weather passable enough, become, as soon as rain falls, quite the reverse. A slight downpour is sufficient to convert them, in most places, into deep quagmires. The main lines of road are, generally speaking, very fair, but have, almost without exception, no bridges and no causeways over rivers or streams: these, when rain falls, are often unfordable for days together, and, during the dry weather, are sheets of heavy sand, through which it is difficult to force a laden cart, even when drawn by cattle in good working condition, and much more so when the cattle used are, to the last degree, emaciated. The roads branching from the trunk lines are, as a rule, indifferent: in the uplands, heavy gradients occur and the roads are intersected by numerous unbridged nullahs and streams, while in the plains the only material for repairs is, in many places, bad.

Such was the condition of the internal communications of the Ceded Districts at the period when the existence of a severe famine, with the almost absolute certainty of its continuance, became evident. The home-stocks of the people were practically exhausted; prices rose to an unprecedented figure; the country being thoroughly dried up, fodder, excepting in a few favoured localities and where wells were available, became almost absolutely unprocureable; marked emaciation, the result of want of sufficient food to adequately sustain the vital powers, manifested itself in man and beast, and death was rampant among them. So early as the end of 1876, cattle were dying by hundreds in most parts of the Ceded Districts, and, not much later on, these hundreds became thousands. In the country surrounding the locality referred to, the famine was more or less intense, and in parts of Mysore and Hyderabad, and of the Bombay Presidency immediately adjoining Bellary, Kurnool, and Kuddappah, the distress was almost, if not quite, as severe as in those districts themselves. There was, to all intents and purposes, little or no food to be had, and though, here and there, hidden stores of grain were held by a very few, even until the climax of the disaster had been reached, they were not brought out, in any appreciable quantity, or were retained by their owners, either in view to future large gain, or as a means of sustenance, should matters grow worse. Nothing, as a matter of fact, could be procured from the surrounding country, for many miles in every direction, excepting perhaps from the Kistna district, and then only in comparatively small quantity. The sole source of supply to which the bulk of the starving people could look for the food of which they stood so much in need was the railway which traverses the Ceded Districts from south-east to north-west, and connects them with the port of Madras on the one side, and, by means of the Great Indian Peninsula Railway, with that of Bombay on the other. Through this channel, 349,000 tons of grain were carried to and deposited at railway stations in the Ceded Districts, between the month of August 1876 and that of December 1878, but the condition of transport, which had to

distribute this throughout the country, was such that heavy blocks of grain occurred at the more important stations, one at Bellary itself being of such extent that, finally, when people were all still dying throughout the district, if not of actual starvation, certainly of something very nearly akin to it, it became necessary, owing to the grain having, while waiting for carriage, been so damaged as to render it unfit for consumption, to replace it in trucks, convey it to the Hagari, and there destroy it.

In the early days of the famine, Government decided to establish reserves of

Transport of rice by Government for the purpose of forming reserves.

grain, in certain localities within the Ceded Districts, and, in the course of six months, 22,666 tons of rice, despatched from Madras by railway, were carried from the several up-country railway stations to the depôts selected, the expenditure on this account being very nearly five lakhs of rupees for cartage and charges for transport staff alone. The average cost of this transport, not including that of the staff, was 5 annas  $2\frac{1}{2}$  pies per ton, or  $2\frac{1}{2}$  pies per maund per mile; but in July 1877 (Government having then, but recently, ceased to carry grain) this rate had become doubled, the charge being Rs 24 for 9 bags of 164lb each nominal, or Rs 1-5-4 per maund for the journey of 60 miles between Gooty and Kurnool, along the best existing road in the district; this being at the rate of  $4\frac{1}{2}$  pies per maund, whereas carriage by railway, of this weight, would not have exceeded  $\frac{1}{2}$  pie per mile.

It was estimated, by the officer in charge, that during the six months that

Discontinued operations of bullock transport in the Ceded Districts of operations by Government.

Government transport operations were in progress, some 9,000 bullocks were thereby maintained in good working condition. As the rates paid were very high and the contractors wealthy men, they were in a position to import fodder for the animals employed and to store it along the lines of road traversed. One thousand six hundred bullocks were, however, necessary to carry this fodder and the food for the men engaged in the transport work. Private traders availed themselves, to an appreciable degree, of the Government transport, they having the inducement to do so, which was offered by the Government charging a reduced rate, and themselves paying the difference. Had traders been in a position to procure carriage more cheaply than Government, they would not have accepted this concession. That transport would never have been available, during the famine, even to the small extent that it was, had not Government, at a very great outlay, gathered and supported what could be procured, is clearly evinced by the facts that, within six weeks after their operations ceased, rates were doubled, and that, on most of the roads, coolies, who thrived on the rice which they pilfered, had taken the place of cattle in the grain carts. In fact, bullock transport virtually ceased when operations by Government were discontinued.

This (June 1877) was the period when the famine throughout the Ceded

Condition of affairs in the Ceded Districts in June 1877 and succeeding months.

Districts entered upon its phase of greatest intensity; the grain traffic had, by this time, cut up all the roads, excepting the great trunk lines, to an extent which rendered them all but impassable; water failed in many places, there being so little that the people sometimes sat for hours over a well in order to procure a small pot of it. Such was the emaciated condition of the coolies that it was impossible, even if water for tamping had been available, to have had the roads at all efficiently repaired; of fodder there was practically none, the condition of things being so bad that the cholum thatch of deserted houses was frequently the only food for cattle. The utter absence of fodder over large areas, its great costliness when it could be procured, and the widespread want of water,

caused a frightful mortality amongst the cattle and great debility in the survivors.

The consequence of this was that the powers of the transport within the Ceded Districts entirely failed, when they were required to be exerted to the most, and, though rice came pouring in rapidly enough, to places on the railway, the existing blocks of grain at these stations increased instead of, as would have been the case if the carriage available had been sufficient to meet the occasion, disappearing. With the enormous prices to which this gave rise, especially in the parts of the country distant from the railway, came an appallingly heavy increase in human mortality. The people died, literally, by thousands, from the effects and concomitants of absolute want, and the country, which was an arid desert, with but rare cases, was strewn with the carcasses of dead or dying cattle.

Appendix A exhibits the period of highest prices of rice, in every taluk, of each of the Ceded Districts, during the famine of 1876-1878. This extended over three months, and to the statement are added, for the sake of comparison, the prices of the month which preceded and of that which followed it. In juxtaposition is given a table for these months showing the death-rate per mille. It will be observed that, with very few exceptions, the increase in the death-rate was synchronous with that in prices.

Appendix B gives the average price of rice, in every taluk of the Ceded Districts, for the year 1877, and the death-rate per mille for the same period. It will be seen that high prices and high death-rate, generally speaking, accompanied distance from the railway. The inference to be drawn from this, which is one supported by what has already been brought forward, is that want of proper distributing transport from the line of rail was at the bottom of the evil. The exceptions to the rule, referred to above, are very probably capable of being explained by local causes, such, for instance, as large relief camps, as was the case at Rayachoti, or the accessibility of the supplies from other districts, as was the case with the Murkapur taluk, which, bordering on the Kistna district, was enabled to procure grain from that source.

It was in September 1877, when a more dire catastrophe than India had ever before known, appeared imminent, and when the sufferers seemed in their misery to have become indifferent as to whether they lived or died, that the long-looked-for and wished-for rains commenced, and that the people and country began to slowly recover from the fell blow which they had received. Had the famine continued for three months longer, nothing could have averted a far more terrible loss of life and property than was actually sustained.

There can be no doubt, as there was ample supplies of grain available from various parts of India and from Burma, and adequate means for carrying these to the sea-ports of the Madras and Bombay Presidencies, and as rice, in quantity so great as to cause an enormous block at the port of Madras, another of great magnitude at Raichore, and many smaller ones at minor places, was imported, that the inability to adequately supply the starving people of the Ceded Districts with food did not arise from any lack of grain from without, or of means for conveying sufficient quantities of it to certain central points, whence the work of distribution had to be effected. The failure lay in the cart transport, which



could not carry off, with anything like sufficient rapidity, the grain which came in.

The Madras Railway the sole agency for carrying food, from without, to the Ceded Districts.

The sole agency which bore supplies from the sea-ports and parts of the country where grain was abundant to the distressed area, comprised in the Ceded Districts, was the Madras Railway.

It is true that this line, under the sudden and abnormal call which was made upon its resources, was at first unable, owing to insufficient engine-power and rolling-stock, to carry as much grain as was required of it, but this defect was soon, to a very great degree, remedied, and as the famine grew so did the quantity of grain carried by the railway.

In October 1876, 11,000 tons of grain were delivered by rail in the Ceded Districts. In September 1877, the month in which the rains began, the quantity was 29,000 tons. Allowing that the average population of the Ceded Districts was, during the famine period, 3,500,000, allowing 1 lb of grain per diem per head of this number, and supposing that the whole of the food of these people had to be brought from without, the average monthly quantity which would have to be supplied would be 47,000 tons. But as this quantity never was delivered, it may be fairly inferred that some grain was available within the distressed area itself. Assuming that this was enough for one fourth of the population, which is not an excessive estimate, the monthly supply which should be put down by the railway would be 36,000 tons. The average monthly quantity delivered for the year ending 30th September 1877 was 25,000 tons. Although this was below the figure which it is taken would be required to make up the amount of grain necessary for the maintenance during famine of the population of the Ceded Districts, it is an incontrovertible fact that it produced, at stations on the Madras Railway, large accumulations of grain which could not be carried off by the cart transport to those points in the interior where it was urgently needed. The Madras Railway could probably, after the first difficulties had been met, have carried the requisite 36,000 tons a month.

As has been previously pointed out, it was in the cart transport which had in most cases to be effected for a considerable distance—in some instances over 100 miles—that the distribution of grain to famine-stricken localities broke down. The circumstances which led to this have already been explained, and these were causes which it was utterly impossible to have averted, excepting at an outlay which even for a famine would be prohibitive. These must be repeated with as absolute certainty as will failure of rains and severe droughts recur in the Ceded Districts, and if this famine-ridden region is to be at all effectually protected from danger, some other mode of distribution of food than cart transport, which can be used with safety for but short leads, must be adopted. The only one possible is a railway.

Failure of cart transport during times of famine being certain, a Railway, if only effective means of protection.

Opinion of the Famine Commissioners with regard to Railways as a means of protection.

This was the opinion, accepted by higher authority, adopted by the Famine Commissioners, who wrote as follows in their report:—

“It is to the future extension of railways that we look as the most complete justification of our belief that the trade of the country may be confidently left to provide for the supply of food in time of scarcity. Such an extension has been going on for some years past, and it will, we trust, henceforth receive an additional impetus, as by these works alone can the whole resources of the country be brought to bear in time of difficulty on any distressed area.”

Again they said—

“Until, however, the whole country is more completely supplied with railways or canals, by which food can be transported rapidly, cheaply, and in large quantities to every part where severe want may exist, the possibility of some unusual demand for Government interference, in particular localities, or for special classes of people cannot be shut out, nor the danger of the occurrence of a great calamity altogether removed.”

A reference to the accompanying map will show that, although the northern and western and part of the eastern portions of the tract comprising the Ceded Districts have, since the famine, been or are in course of being effectually protected by railways, the southern and south-western part, embracing the whole of the district of Anantapur, the subdivision of Cuddapah, which includes half of that district, and the taluk of Pulvendala which adjoins—all of which suffered most severely during 1876-1878—are, at the present moment, in the event of the recurrence of distress, in exactly the same plight, as regards internal communication, as they were in the great famine. The taluks of Palmaner and Chandragiri and the Punganur zemindari, all in the district of North Arcot, which immediately border upon Cuddapah, and which were heavily stricken during the famine, are still as devoid of protection as they then were.

The Anantapur district has no ghâts to speak of, but its roads are bad: there is cotton soil to be crossed and the distances are great.

The taluks in the Cuddapah district, south and west of the railway, forming the subdivision, are cut off from the Madras line by high ranges of hills which can be crossed by but a few passes, all of which are in a marked degree steep. Their distance from it is also in most cases very considerable.

The taluk of Palmaner and the Punganur zemindari can be approached from the railway only by means of most trying ghâts, while the road into the Chandragiri taluk is exceedingly bad, would cost a large sum to metal and put into good working order, and is constantly intersected by unbridged streams and nullahs, which are liable to sudden and heavy floods.

The area of this piece of country is about 11,500 square miles, with a population at the census of 1881 of 1,322,000, and a land revenue of 17½ lakhs.

The cost of famine relief and works in this region up to the close of 1878 was 77 lakhs. The loss of land revenue alone has been 34 lakhs of rupees. The decrease of population, as ascertained at the last census, was 348,000, and the loss of cattle may be taken at, at least, 350,000, valued at 35 lakhs of rupees: 330,000 acres of land were thrown out of cultivation in 1881-82. In the Anantapur district alone 208,000 acres of this extent were at the end of 1884-85 still unresumed. The total area still remaining thrown out of occupation is 311,000 acres, assessed at Rs. 1,50,000, and the total loss in this part of the country may be taken to have been, at the very least, 160 lakhs. The whole of the tract is devoid of any irrigation work of importance; it is subject, in great part, to a very low rainfall, and many portions of it are composed of bad, stony, and arid soil: it to a very considerable extent was only last year on the verge of another famine. As for roads, Local Fund Boards are year after year, owing to the increasing calls upon them, entailed by education, sanitation, medical services, &c., becoming more and more impecunious, and in lieu of adding to the allotments which were at the best only enough to keep the existing commu-

Area, population, and land revenue of the unprotected tract.

Losses of life, stock, and revenue during the famine.

nications in fair working order, they are almost universally reducing them, and the natural consequence is growing deterioration. There is no money for improvements or for opening up fresh lines : bridges and causeways over rivers are luxuries which must be postponed to an indefinite period. In the event of the recurrence to severe distress, the present condition of this tract courts disaster.

To recapitulate, it has been shown that the area comprised within the Ceded Districts may be taken as 27,000 square miles, with a population of 3,978,000; that the famine of 1876-1878 caused a decrease of population amounting to 800,000; a loss of cattle estimated at 730,000 valued at the least at 73 lakhs of rupees; an expenditure at the time of not less than 268 lakhs; and a decrease in cultivation which at the close of 1884-85 was, as compared with the occupation of 1875-76, 828,000 acres assessed at 5 lakhs of rupees; and that the rate of recovery is slow.

It has been stated that this area was devastated by famine in the years 1803, 1824, 1833, 1854, 1866, and 1876, and that it is considered by the most competent authorities (notably by the Famine Commissioners) that it comprises the tract which, of all Southern India, is that where famine has always been most severe.

It has been further pointed out that, while the physical characteristics of the country interpose very considerable obstacles to the construction and maintenance of ordinary roads, they equally bar all effective attempts to protect the country by irrigation works, and the transport operations of Government during the last famine have been quoted to prove that, during a drought in these districts, transport by road must be regarded as impracticable.

Attention has been also called to the facts that the increase in the death-rate was, in a marked degree, synchronous with that in prices, and that high prices and a high death-rate, generally speaking, accompanied distance from the railway.

It has, too, been shown that there is sufficient ground for the belief that the Madras Railway could have carried all the grain required by the people of the Ceded Districts during the famine; that it did carry a very large proportion of the quantity so required; that the delivery of this at railway stations occasioned blocks; and that it was not the railway but the cart transport which failed. The opinions of the Famine Commissioners, to the effect that railways are the only reliable means of protection from famine, have also been quoted.

It now remains to indicate what has been already done in the way of railway communication, admittedly the only effective means for protection from famine, and what must yet be done, to attain the object in view and to give full effect to the outlay already incurred.

External sources of supply of grain to the Ceded Districts during the famine.

During the last famine two external sources of supply only were available for the Ceded Districts :—

- (a) through the port of Madras;
- (b) through Raichore.

In both cases the supply was limited by the carrying capacity of the Madras Railway, and, restricted as this was, it is now quite beyond dispute that, with the aid of borrowed rolling-stock, the supply was far in excess of the transporting power from the railway stations to the interior.

Supply limited by carrying capacity of Madras Railway.

Since the famine, the power of the Madras Railway has been gradually increased, until it is now estimated that in 1890 it will be able, with its own rolling-stock, to maintain a steady delivery of grain from its two terminal points alone, equal to the maximum attained in any one month during the last famine. In other words, it will be in a position, unaided by engines and rolling-stock from other lines, to entirely block its up-country stations.

In addition to the increase of power in the Madras Railway itself, two fresh sources of supply have been made available, *viz.*, (a) the Bellary-Kistna, and (b) [the Cuddapah-Nellore Railways; but unfortunately, owing to financial pressure, these lines are being constructed up to the Madras Railway itself and no further.

The former, 279 miles in length and estimated to cost 188½ lakhs, will carry the grain-supply from the Godavari and Kistna deltas, estimated as having available for export, even in years of drought, surplus produce to the extent of 300,000 tons, and this with a maximum lead no greater than from the port of Madras.

The latter, 86 miles in length and estimated to cost 53½ lakhs, will bring food-grain from the Nellore delta and from an additional roadstead on the east coast.

With four instead of two points of supply, the capacity of the Madras Railway will be still further increased, owing to the shorter average lead, though the proposal to convert practically the Bellary Branch from a broad to a metre gauge line is one calculated to diminish the useful effect of this.

The road communications having for want of funds deteriorated, the result cannot be doubted; the next famine will find the Madras Railway stations hopelessly blocked with food-grain which cannot be transported from them.

To remedy this, and in order that the expenditure already incurred on the Bellary-Kistna and Cuddapah-Nellore lines may be made in fact, as well as in name, protective as regards the Ceded Districts, it is only necessary to expend the moderate sum of 140 lakhs, in constructing the Tirupati-Guntakul line, thus substituting for carriage by cart that by rail for a food-supply estimated at 220,000 tons in the year.

The extension line, as projected, is admirably adapted for the purpose, and forms a loop-line which, leaving the Madras Railway at Tirupati, ascending the plateau with the moderate gradient of 1 in 100 and traversing from end to end the taluks most disastrously affected during the last famine, re-joins the Madras Railway at Guntakul, thus affording there an outlet for the food-supply from the north and east which otherwise must accumulate at this junction—a spot singularly ill-adapted for a distributing centre, without a road in its neighbourhood, and having neither history, nor significance, apart from the railway location.

In addition to the loop-line above described, a connecting link between it and the South Indian Railway has been projected.

Additional projected line, linking Southern Indian and Southern Mahratta systems, and its advantages.

This, leaving the South Indian Railway at Villupuram and traversing the North Arcot district, will pass through the populous towns of Vellore and Chittoor, and, joining the loop-line from Tirupati to Guntakul, will afford unbroken metre-gauge connection between the South Indian Railway and Southern Mahratta systems,—that is, between the Tanjore delta and the famine-stricken area which it is desired to project,—besides rendering the possible interchange and, when occasion requires, the concentration of metre-gauge rolling-stock.

A further and most valuable distributing line will be that connecting the loop-line above described, through Hindupur, with Banaglore and the Mysore Railway, now part of the Southern Mahratta metre-gauge system, but this, like the connecting link with the South Indian Railway, must, if funds are not forthcoming for the entire project, yield in priority of claim to the loop-line itself.

It may be added that the Southern Maharatta Railway system now nearly complete will also assist to protect the Bellary district by opening communication between the famine-stricken districts and the West Coast port of Marmagoa. This system of lines will undoubtedly in the future play an important part in famine relief, but it must not be overlooked that the area to be served through this port is very large, and that the off-take will be limited to that of a metre-gauge line with heavy gradients.

Railways already constructed or sanctioned leave a large area as unprotected as it was in the last famine.

What has been done so far is to protect a portion of a tract of country which, it is admitted on all hands, lies under the absolute certainty of famine at periods which, though they may perhaps not recur with mathematical regularity, are still shown by experience never to be very far apart. The other portion of almost equal area and of equal population, the most rainless and worst of the whole, in part of which, too, Nature, very recently, gave a distinct warning of famine, has been left, as far as protection from disaster of this description is concerned, in the same condition as it was at the commencement of the great famine of ten years ago.

The Tirupati-Guntakul Railway would, if constructed, render this now unprotected area so safe that in the event of another famine the question of grain-supply to the Ceded Districts would be one which need not cause the least anxiety to Government, as private trade would be in a position to do all that was wanted.

Projected Tirupati-Guntakul line will effectually protect this area.

The chances of the recurrence of another famine, such as that of 1876-78, are, for a considerable series of years, comparatively remote, but human intelligence cannot foretell when a like calamity may not again fall upon the land. It will still require years to fully obliterate the effects of the blow which this great famine inflicted upon the prosperity and advancement of the country. What the extent of this was it would be difficult to accurately calculate, but the cost of it to the State and people would, if reckoned to the full, certainly not fall short of the enormous sum of 14 millions sterling, a very considerable proportion of which is assignable to the Ceded Districts, where the famine was undoubtedly most severe, and where its after-effects have been most felt and most enduring.

Recurrence of famine.

It seems, therefore, but common prudence to at once set the universally acknowledged point of danger in a state of defence against an enemy that may come one knows not when : it may be half a century hence or only a couple of years, but come it will, sooner or later, and, under these circumstances, it behoves the State to be ready to meet famine at, figuratively speaking, a moment's notice. It will not be, if the Tirupati-Guntakul Railway is not complete and in working order when famine comes again. The Famine Commissioners, who went thoroughly and carefully into the subject in all its bearings, have expressed their opinion as to the necessity for the speedy construction of protective railways in the following words, which, conveying the caution that they do, call for the most serious and careful consideration :—

“During the late years of famine, India was saved by its railways from disasters the bare possibility of which should serve as a warning not to postpone the extension of works of this class to which the country has mainly to look for alleviating the horrors of famine.”

The figures in the foregoing pages show that the claims of the Tirupati-Guntakul extension to immediate construction rest not alone on humanitarian grounds, or only on arguments, the weight of which may be deemed diminished by the possibility of a series of favourable seasons, but that they are based, to some extent, on its financial prospects as a Productive Public Work.

One and a half lakhs of rupees approximately are now being lost yearly to Government through the abandonment of cultivation, which would certainly be resumed were the line constructed; and this would secure, on the assumption that the line only paid  $1\frac{1}{2}$  per cent., a fair return upon the outlay.

When it can be said further that the expenditure of 140 lakhs would save a calamity which, during the present century, has recurred six times and at no longer interval than 21 years, and that the last disaster of the kind represented a loss to the country of 160 lakhs, in the area for which protection is now sought, it is difficult to conceive the financial position that would justify a Government in delaying to provide the requisite funds for this comparatively small railway extension.

NOTE.—The figures in this note appertaining to Railway traffic were obtained from the Consulting Engineer for Railways.

## APPENDIX A.

*Statement showing the Period of Highest Prices of Rice and Death-rate for the corresponding period in the District of*

## CUDDAPAH.

TALUKS.	RICE, SECOND SORT.					DEATH-RATE.				
	June 1877.	July 1877.	August 1877.	September 1877.	October 1877.	June 1877.	July 1877.	August 1877.	September 1877.	October 1877.
Cuddapah . . . . .	8'44	6'53	6'22	6'32	7'78	3'8	4'1	3'9	3'5	3'1
Jammalamadugu . . . . .	7'05	5'39	5'20	5'39	6'73	7'1	4'3	3'6	3'9	3'0
Pulivendla . . . . .	7'47	5'81	6'00	5'39	6'64	9'6	7'6	4'5	3'3	3'7
Proddutur . . . . .	7'98	5'81	5'81	5'90	7'88	3'4	4'6	4'9	4'1	4'1
Kadiri . . . . .	6'73	5'39	5'59	5'43	6'22	6'7	9'8	10'2	8'8	7'0
Rayachoti . . . . .	8'18	6'64	6'22	6'22	7'05	9'4	9'8	14'7	10'7	6'9
Vengal Rao . . . . .	6'62	5'81	5'40	5'40	7'04	9'6	14'2	22'2	16'2	10'3
M. Anantapur . . . . .	6'64	5'81	5'81	5'81	7'88	7'3	9'2	11'6	8'3	6'7
Badvel . . . . .	6'87	5'69	5'17	4'98	5'27	3'3	6'2	5'5	4'6	4'1
Sidhout . . . . .	8'30	5'87	5'81	5'39	5'81	2'5	3'7	2'9	2'3	5'0
Prampur . . . . .	7'47	4'95	6'02	5'60	8'92	3'4	6'2	5'8	4'2	6'6
M. J. Cuddapah . . . . .	...	...	...	...	...	4'1	4'4	5'4	5'2	3'9
Average . . . . .	7'42	5'79	5'79	5'65	7'15	6'2	7'6	8'7	6'8	5'7
Average of five years before the famine . . . . .	15'00	15'10	15'10	15'00	15'10	...	...	...	...	...

## ANANTAPUR.

Dharmavaram . . . . .	6'88	5'53	5'13	5'53	6'48	6'6	11'6	10'8	10'7	8'0
Hindupur . . . . .	6'34	5'40	4'86	5'26	6'88	5'3	10'6	12'7	10'9	6'2
Madakshira . . . . .	5'94	6'21	5'13	4'59	6'75	12'8	13'4	16'1	15'7	13'2
Tadpatri . . . . .	7'15	5'94	5'94	6'10	8'10	6'0	7'9	6'3	7'0	5'1
Penukonda . . . . .	6'21	6'21	4'86	4'86	5'40	7'2	10'2	11'5	8'6	6'7
Anantapur . . . . .	7'03	5'40	5'67	5'94	7'40	6'9	7'2	6'3	5'3	4'1
Gooty . . . . .	6'75	5'94	5'67	5'26	7'42	6'2	9'4	9'7	11'0	7'7
M. T. Anantapur . . . . .	...	...	...	...	...	8'3	8'1	14'0	12'2	9'5
Do. Gooty . . . . .	...	...	...	...	...	4'1	6'8	12'3	9'0	6'4
Average . . . . .	6'62	5'80	5'32	5'36	6'89	7'0	9'5	11'1	10'0	7'4
Average of five years before the famine . . . . .	14'90	14'70	14'60	14'90	14'60	...	...	...	...	...

## BELLARY.

Hospet . . . . .	6'34	5'26	5'26	5'13	6'07	15'1	15'8	14'9	13'7	10'4
Kudligi . . . . .	5'94	5'40	5'40	5'87	6'48	5'6	6'5	9'5	7'5	5'2
Huvinahadgalli . . . . .	5'40	4'86	4'86	4'59	5'87	12'9	16'7	13'5	10'1	6'1
Alur . . . . .	7'02	5'94	5'40	5'40	6'48	7'8	12'9	8'8	7'2	6'0
Adoni . . . . .	6'92	5'66	5'53	5'86	7'42	6'8	9'5	8'7	8'5	6'7
Rayadrug . . . . .	6'48	5'40	5'40	5'94	7'56	5'5	5'9	6'4	4'7	4'2
Bellary . . . . .	7'29	6'02	5'67	6'21	7'29	6'6	9'0	9'3	9'7	8'8
Harpanahalli . . . . .	5'13	4'86	4'72	4'64	5'13	8'3	13'0	12'9	9'7	5'2
M. T. Bellary . . . . .	...	...	...	...	...	4'8	4'1	6'1	4'5	3'7
Do. Adoni . . . . .	...	...	...	...	...	2'0	9'1	4'0	4'5	1'8
Zemindaries . . . . .	...	...	...	...	...	6'3	6'1	6'4	4'5	2'9
Average . . . . .	6'31	5'42	5'28	5'43	6'51	7'5	9'9	9'1	7'7	5'5
Average of five years before the famine . . . . .	14'90	14'70	14'60	14'90	14'60	...	...	...	...	...

## APPENDIX A—continued.

## KURNOOL.

TALUKS.	RICE, SECOND SORT.					DEATH-RATE.				
	June 1877.	July 1877.	August 1877.	September 1877.	October 1877.	June 1877.	July 1877.	August 1877.	September 1877.	October 1877.
Pattikonda . . . . .	7'56	5'40	5'67	5'67	6'48	6'8	9'3	11'5	9'6	6'7
Ramallakota . . . . .	5'72	4'70	4'99	5'18	5'18	5'8	9'1	13'1	9'4	7'9
Nandikotkur . . . . .	5'72	5'72	5'18	5'18	6'79	8'2	10'2	13'1	13'9	20'5
Nandiyal . . . . .	6'07	5'00	4'99	5'17	6'26	4'9	5'4	9'2	11'2	13'7
Sirvel . . . . .	6'79	5'72	5'72	5'35	7'51	4'8	5'6	8'5	6'2	5'5
Koilkuntla . . . . .	..	5'81	5'60	5'39	6'64	4'6	5'0	5'7	5'5	6'3
Markapur . . . . .	7'47	7'05	5'39	6'12	...	1'1	4'3	4'8	4'9	7'3
Cumbum . . . . .	6'23	4'57	4'93	...	6'22	1'6	4'5	5'0	3'8	4'5
M. T. Kurnool . . . . .	...	...	...	...	...	12'9	17'5	18'3	18'5	20'3
Average . . . . .	6'51	5'49	5'31	5'43	6'44	5'1	7'4	9'3	8'5	9'2
Average of five years before the famine . . . . .	13'10	13'30	13'20	13'10	13'30	...	...	...	...	...



## APPEN

Statement showing the Price of Rice and Rate of

CUDDA

TALUKS.	PRICE OF RICE, SECOND SORT, IN SEERs OF 80 TOLAS PER RUPEE.												
	January 1877.	February 1877.	March 1877.	April 1877.	May 1877.	June 1877.	July 1877.	August 1877.	September 1877.	October 1877.	November 1877.	December 1877.	Average.
Cuddapah . .	7.26	7.88	7.88	8.92	8.48	8.44	6.53	6.22	6.32	7.78	8.61	8.81	7.76
Do. Manieipal Town	...	...	...	..	...	...	...	...	...	...	...	...	...
Jammalamadugu	7.47	7.05	8.30	8.30	7.56	7.05	5.39	5.90	5.39	6.73	7.66	8.30	7.09
Pulivendia . .	6.22	6.22	7.47	8.71	7.47	7.47	5.81	6.00	5.39	6.64	7.47	8.30	6.93
Proddutur . .	7.05	7.47	7.67	7.88	7.35	7.98	5.81	5.81	5.90	7.88	7.25	9.76	7.32
Kadiri . .	6.22	6.22	6.74	7.05	7.05	6.73	5.39	5.59	5.49	6.22	8.59	8.30	6.63
Rayachoti . .	6.66	7.47	9.33	9.32	7.47	8.18	6.64	6.22	6.22	7.05	8.49	10.15	7.77
Voyalpad . .	6.73	7.26	7.61	8.44	7.61	6.52	5.81	5.40	5.40	7.04	7.47	7.88	6.93
Madanapalle .	7.47	5.81	7.88	7.47	7.47	6.64	5.81	5.81	5.81	7.88	7.88	9.13	7.09
Badvel . .	6.22	6.98	8.33	8.30	7.25	6.87	5.69	5.17	4.98	5.27	5.81	8.00	6.60
Sidhout . .	6.66	7.47	7.88	8.49	8.71	8.30	5.87	5.81	5.39	5.81	5.81	5.81	6.83
Pullampet . .	7.26	7.88	8.09	8.51	8.09	7.47	4.95	6.02	5.60	8.92	8.19	9.13	7.51
Average . .	6.82	7.20	7.91	8.31	7.69	7.42	5.79	5.79	5.65	7.15	7.68	8.55	7.11
Average of five years before the famine . .	13.6	13.8	14.0	14.3	14.8	15.0	15.1	15.1	15.0	15.1	15.2	15.2	14.6

## ANANT

Dharmavaram . . .	6.88	7.56	7.56	8.10	7.69	6.88	5.53	5.13	5.53	6.48	7.56	8.10	6.92
Hindupur . . .	6.34	6.61	6.75	7.26	6.61	6.34	5.40	4.96	5.26	6.68	6.81	7.69	6.38
Madaksira . . .	6.21	6.48	6.21	7.29	6.75	5.94	6.21	5.13	4.59	6.75	5.94	7.83	6.28
Tadpari . . .	7.02	7.02	7.29	8.37	7.56	7.15	5.94	5.94	6.10	8.10	8.91	8.37	7.31
Penukonda . . .	5.94	6.21	6.21	6.48	6.48	6.21	6.21	4.86	4.86	5.40	7.02	7.56	6.12
Anantapur . . .	7.02	7.02	7.83	8.10	7.56	7.08	5.40	5.67	5.94	7.40	7.69	8.37	7.09
Do. Municipal Town . . .	...	...	...	...	...	...	...	...	...	...	...	...	...
Gooty . . .	7.02	7.29	7.56	7.56	7.56	6.75	5.94	5.67	5.26	7.42	7.56	7.56	6.93
Do. Municipal Town . . .	...	...	...	...	...	...	...	...	...	...	...	...	...
Average . . .	6.63	6.88	7.06	7.59	7.17	6.62	5.80	5.32	5.36	6.89	7.36	7.93	6.72
Average of five years before the famine . . .	13.8	14.2	14.1	14.60	14.80	14.90	14.70	14.60	14.90	14.60	14.80	14.80	14.5

## DIX B.

*Mortality during the year 1877 in the District of*

РАН.

[illegible]

APUR.

3'9	5'9	12'6	7'0	6'2	8'6	11'6	10'8	10'7	8'C	13'4	16'2	112'9
4'3	17'2	22'9	5'4	5'5	5'3	10'6	12'7	10'9	6'2	6'0	5'8	112'3
4'7	24'9	13'9	7'5	8'6	12'8	13'4	16'1	15'7	13'2	15'7	13'8	160'3
7'1	6'8	6'8	9'2	7'3	6'1	7'9	6'3	7'0	5'1	6'7	7'0	83'3
5'4	18'8	11'2	4'8	5'9	7'2	10'2	11'5	8'6	6'7	11'2	13'1	114'6
4'8	6'8	5'4	5'8	3'8	6'9	7'2	6'3	5'3	4'1	7'3	12'3	75'5
1'8	5'5	4'3	3'2	4'8	8'3	8'1	14'0	12'2	9'5	10'7	11'5	93'9
7'5	4'6	7'0	6'3	5'5	6'2	9'4	9'7	11'1	7'7	8'9	9'5	94'0
3'5	0'9	7'0	2'2	1'0	4'1	6'8	12'3	9'1	6'4	6'9	6'4	67'3
4'8	10'0	10'3	5'7	5'4	7'1	9'5	11'1	10'1	7'4	9'6	10'6	101'6
...	...	...	...	...	...	* ...	...	...	...	...	...	...

## Statement showing the Price of Rice and Rate of

BEL

TALUKS.	PRICE OF RICE, SECOND SORT, IN SEERS OF 80 TOLAS PER RUPEE.												
	January 1877.	February 1877.	March 1877.	April 1877.	May 1877.	June 1877.	July 1877.	August 1877.	September 1877.	October 1877.	November 1877.	December 1877.	Average.
Hospet . . .	7'02	6'75	6'88	12'01	7'15	6'34	5'26	5'26	5'13	6'07	6'21	6'88	6'75
Kudligi . . .	6'75	7'02	7'02	7'56	7'02	5'94	5'40	5'40	5'67	6'48	8'37	7'83	6'71
Huvinahadgalli . . .	7'56	7'29	6'78	7'02	6'48	5'40	4'86	4'86	4'59	5'67	6'75	6'48	6'16
Alur . . .	7'02	7'29	8'16	8'64	7'83	7'02	5'94	5'40	5'40	6'48	8'10	7'56	7'06
Adoni . . .	7'15	7'96	8'00	8'61	7'23	6'92	5'66	5'53	5'66	7'42	11'34	7'56	8'00
Do. Municipal Town	...	...	...	.	...	...	...	...	...	...	...	...	...
Rayadrug . . .	7'02	7'29	7'56	7'56	7'29	6'48	5'40	5'40	5'94	7'56	8'64	7'92	7'01
Bellary . . .	7'83	8'37	8'84	8'50	7'69	7'29	6'02	5'67	6'21	7'29	7'96	8'10	7'46
Do. Municipal Town	..	..	...	...	...	...	.	...	...	...	...	...	..
Harpanahalli . . .	6'48	7'29	7'02	7'02	6'13	5'13	4'86	4'72	4'64	5'13	7'32	9'50	6'27
Average . .	7'10	7'41	7'50	8'36	7'10	6'31	5'42	5'26	5'43	6'51	8'06	7'73	6'93
Average of five years before famine . .	13'8	14'2	14'1	14'6	14'8	14'9	14'7	14'6	14'9	14'6	14'5	14'8	14'5

KUR

Pattikonda. . .	6'75	7'02	7'29	7'97	7'56	7'56	5'40	5'67	5'67	6'48	8'37	6'21	6'83
Ramallakot * . . .	6'07	6'78	6'60	6'61	6'43	5'72	4'70	4'99	5'18	5'18	5'35	6'79	5'9
Nandikotkur . . .	6'07	6'43	6'25	6'79	6'26	5'72	5'72	5'18	5'18	6'79	6'07	9'30	6'31
Nandyal . . .	5'72	6'78	6'96	7'32	6'43	6'07	5'00	4'90	5'17	6'26	7'15	7'14	6'25
Srivel . . .	6'07	6'78	7'86	7'88	6'79	6'79	5'72	5'72	5'35	7'51	7'86	8'21	6'88
Koilkuntla . . .	6'64	7'05	...	7'88	6'85	...	5'81	5'60	5'39	6'64	8'30	9'34	6'95
Markapur . . .	7'47	8'30	8'30	8'30	7'88	7'47	7'05	5'39	6'12	...	6'64	6'64	7'23
Cumbum . . .	...	7'05	6'64	6'23	6'23	6'23	4'57	4'98	...	6'22	4'98	6'64	6'23
Kurnool Municipality . . .	...	...	...	...	...	...	...	...	...	...	...	...	...
Average . . .	6'33	6'94	7'00	7'37	6'80	6'51	5'49	5'31	5'43	6'44	6'84	7'53	6'6
Average for five years before famine . . .	13'0	12'8	12'5	13'0	13'1	13'1	13'3	13'2	13'1	13'3	13'5	13'2	13'1

\* Death-rate for Kurnool

DIX B--continued.

Mortality during the year 1877 in the District of  
LABY.

DEATH-RATE PER MILE.												
January 1877.	February 1877.	March 1877.	April 1877.	May 1877.	June 1877.	July 1877.	August 1877.	September 1877.	October 1877.	November 1877.	December 1877.	TOTAL.
6.2	6.7	8.6	6.0	9.4	15.1	15.8	14.9	13.7	10.4	4.7	5.8	117.32
6.0	6.2	6.1	3.8	4.8	5.6	6.5	9.5	7.5	5.2	3.4	2.2	66.81
6.9	8.7	6.9	8.1	8.7	12.9	16.7	13.5	18.1	6.1	4.6	2.1	113.3
12.1	5.5	7.5	4.4	5.5	7.8	12.8	8.8	7.2	6.10	5.4	9.8	92.85
5.8	6.2	6.2	5.2	7.4	6.8	9.5	8.7	8.5	6.7	6.4	5.5	82.9
7.9	12.2	6.5	2.5	2.8	2.0	9.1	4.0	4.5	1.8	1.9	2.1	57.3
2.2	2.3	3.7	6.2	6.7	5.5	5.9	6.4	4.7	4.2	6.10	6.4	60.3
4.3	3.5	6.10	7.6	5.10	6.6	9.10	9.3	9.7	8.8	7.7	6.4	84.2
2.6	2.7	4.10	2.5	4.4	4.8	4.1	6.1	4.5	3.7	5.9	7.2	52.6
2.3	3.8	7.4	5.5	4.2	8.8	13.0	12.9	9.7	5.2	3.3	3.8	79.9
5.6	5.8	6.3	5.2	5.9	7.6	10.2	9.4	8.8	5.8	4.9	5.1	80.4
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6.8	4.9	5.8	5.5	7.1	6.8	9.3	11.5	9.6	6.7	6.2	6.9	87.4
4.9	4.2	5.1	6.1	8.1	5.8	9.1	13.1	9.4	7.9	12.10	8.5	94.3
5.8	2.8	4.4	6.3	6.5	8.2	10.2	13.1	13.9	20.5	27.9	16.9	136.5
3.9	3.9	4.9	6.2	5.8	4.9	5.4	9.2	11.2	13.7	23.0	17.4	108.5
3.8	3.7	5.1	5.8	6.1	4.6	5.6	6.5	6.2	5.5	8.5	10.6	72.0
11.2	8.0	6.4	6.0	5.7	4.6	5.10	5.7	5.5	6.3	12.5	12.7	89.7
8.6	14.3	5.8	3.3	2.2	1.1	4.3	4.8	4.9	7.3	15.7	12.1	84.4
8.9	4.9	5.3	5.2	3.7	1.6	4.5	5.10	3.8	4.5	5.7	5.5	58.7
5.7	6.6	12.5	10.1	8.0	12.9	17.5	18.3	13.5	20.3	21.8	15.9	168.1
6.6	5.9	6.1	6.0	5.9	5.6	7.1	9.7	9.2	10.3	14.9	11.8	99.9
...	...	...	...	...	...	...	...	...	...	...	...	...

town shown separately.

No. 40 (Railway), dated 7th April 1887.

From—The Secretary of State for India,

To—The Government of India.

With reference to Your Excellency's Railway letter No. 139, dated 10th September 1886, and my reply to the same, No. 101 (Railway), dated 25th November 1886, I transmit herewith copy of a communication addressed to this office by the Board of the South Indian Railway Company, and of a letter to their Agent, No. 639, dated 14th January 1887, stating that, in addition to the working of the nearly completed Nellore-Tirupati State Railway, which I understand it is your desire they should undertake, they would be prepared to enter into an agreement for the construction and working of the projected Tirupati-Dharmavaram and Pakal-Villupuram Railways, which have been contemplated principally in view to meet the exigencies of a time of scarcity, but further proceedings in connection with which, beyond the preparation of estimates, have been postponed until funds become available.

2. I am aware of the anxiety of Your Excellency's Government, and of the Government of Madras, to proceed with the construction of these lines as soon as financial conditions render it possible, and the proposals of the Board are therefore forwarded for your consideration, with a request that you will inform me whether, in your opinion, their agency can be usefully employed in the manner suggested.

3. In your Railway letter No. 139 of the 10th September last, you stated that it was "perhaps unnecessary to consider definitely at the present time the agency by which the uncommenced lines might be constructed and worked, but the fact that they will be on the metre gauge, and their obvious dependence on Madras and its Government for supplies and regulation in time of famine, would seem to indicate that at least the Tirupati-Dharmavaram and Pakal-Villupuram lines, together with the Nellore-Tirupati line, upon reaching completion, and possibly the two northern lines also, should be combined with the South Indian Railway as one administration."

4. I agree in this view, and, for the reasons stated in your more recent letter dated the 22nd of February, No. 47 (Financial), which is still under my consideration, it is not necessary to come to an immediate decision; but the questions raised in the Company's letter in respect to anticipating the arrangements to be made in 1890, when the first period of their contract expires, is one which will require careful consideration. I am not prepared to take any step which would interfere with the termination of the existing contract in accordance with its provisions; but, should the financial position be favourable, it might be possible to make a provisional arrangement with the Company by which they could commence operations either with funds advanced by Government or raised by means of debentures, and between the present time and the expiry of their existing agreement the future management of the metre-gauge lines in question could be discussed and settled.

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No. 1459, dated 2nd March 1887.

From—HENRY W. NOTMAN, Esq., Managing Director, South Indian Railway Company,

To—The Under-Secretary of State for India.

A telegram was recently received from the Agent of the Company in India,

enquiring whether the Board would raise the capital for the Nellore-Tirupati (now called Renigunta) State Railway.

The Secretary of State in Council is aware, from the letter addressed to the Agent by the Board, under date of 14th January 1887, of which a copy is enclosed for reference, that they have already expressed their readiness to work this line, and also to raise the capital for and to construct the State Railways from—

(1) Tirupati (Renigunta) to Dharmavaram, 166 miles, estimated cost 103 lakhs=810,000*l*.

(2) Pakkal Junction (on 1) to Villupuram, 135 miles, estimated cost 77 lakhs=577,500*l*.

They would also be ready to raise the capital representing the cost of the Nellore-Tirupati (Renigunta) section, 83 miles in length, estimated at 61 lakhs, or (at 1*s*. 6*d*. per rupee) 457,500*l*., making a total for the whole of the lines referred to of 1,845,000*l*., by means of debentures, under the guarantee of the Secretary of State, on the best terms that could be obtained, and for such period as might be deemed expedient, or by such other form of security or stock as the Secretary of State in Council may deem advisable.

The Board would also be prepared to carry out any portion of these lines with funds provided by the Secretary of State, should that course be preferred.

Under the existing contract, the first period at which the Secretary of State can purchase the South Indian Railway occurs in 1890. Should it be decided to make use of the agency of the Company for the construction of the two lines not yet begun, it is improbable that they would be completed before that date, and the present, therefore, seems to the Directors to be a fitting time to determine whether, and on what basis, the existence of the Company should be prolonged (in the event of the Secretary of State availing himself of the first period of purchase under the contract), for the purpose, more especially, of working the combined system. The Directors would suggest that in that case, if it should not be thought desirable to limit the functions of the Company to working such system, the existing organisation and the powers which they possess to raise further capital should also be availed of, and the Board will be prepared to give their careful consideration to any proposals to that end which the Secretary of State in Council may be pleased to suggest.

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No. 639, dated 14th January 1887.

From—HENRY W. NOTMAN, Esq., Managing Director, South Indian Railway Company,

To—The Agent, South Indian Railway Company.

The Directors understand that it might probably meet the views of the Government were this Company to undertake the working of the Nellore-Tirupati State Railway, 83 miles in length, which will, it is believed, be ready for opening in April next. The Directors desire that you will intimate to Government their readiness to undertake this work, on terms to be arranged, which might, it is thought, be similar, *mutatis mutandis*, to those proposed for the working by the Southern Mahratta Company of the Guntakul-Nundial section of the Bellary-Kistna State Railway, of which you are already in possession of a copy.

2. The Directors have reason, further, to believe that Government has had under consideration the question of entrusting to this Company the construction, as well as the working, of certain State Railways projected in the immediate vicinity of their system.

Should this be the case, the Board would be prepared, should the Government see fit to place the work in their hands, to undertake the construction of the lines from (and to raise the necessary funds for this purpose, on terms to be settled)

(1) Tirupati to Darhmavaram, 166 miles.

(2) Pakkal Junction to Villupuram, 135 miles.

3. The estimated cost of these two lines is, it is stated, 108 lakhs and 77 lakhs, respectively, or, with the rupee at 1s. 6d., 1,387,500*l*.

Should the course indicated be followed, and the construction of these lines be handed over to the Company, to whose system they would, when completed, form valuable feeders, a saving to the State would be effected in the outlay upon large workshops and plant for the maintenance of rolling-stock which would otherwise be necessary, and in the expense of a separate supervising establishment, as the staff of the Company would, with small increase, and that principally in the subordinate grades, be sufficient for the work.

No delay in commencing operations need occur after terms are agreed upon, as the organisation of the Company is complete, and the works could be proceeded with at once.

Should the Government of India, in reply to the references you are now empowered to make to them, manifest a desire to employ the agency of this Company for any of the objects mentioned in this letter, the Board will, on hearing from you to that effect, place themselves in communication with the Secretary of State, in view to the early settlement of terms.

No. 94 (Railway), dated 16th May 1887.

From—The Government of India,

To—The Secretary of State for India.

We have had the honour to receive Your Lordship's Despatch No. 40 R., dated 7th ultimo, on the subject of the transfer of the Cuddapah-Nellore State Railway, including the uncommenced Tirupati-Dharmavaram and Pakal-Villupuram sections, to the South Indian Railway Company for the purpose of working and eventual completion.

2. This despatch has crossed our No. 65 R., dated the 15th March last, replying to Your Lordship's previous reference No. 15 R. of 10th February, in which, subject to the condition that the date of prosecution of the uncommenced sections should be reserved to be fixed at the discretion of the Secretary of State, we expressed our opinion in favour of this transfer, because it would cheapen the working of the South Indian Railway Company, keep its staff better employed, spread the cost of general superintendence over a much extended area, and reduce considerably the large outlay on workshops and plant which the State Railway must otherwise incur.

3. The case of this railway is similar in principle to that of the Bellary-Kistna Railway, regarding which we are addressing Your Lordship separately under this date. The advantages of a transfer are equally unquestioned, and probably greater in degree, because the South Indian Railway being a smaller concern (649½ miles) than the Southern Mahratta Railway (1,059½ miles), will benefit more in proportion by the addition of 384 miles to its system than the latter will by the addition of 390. The points of difference between the two

cases lie in detail only,—*viz.*, the Nellore-Tirupati section is completed, so no further funds are immediately needed (as they are for the completion of the Guntakul-Bezawada section), but the South Indian Company, to which the proposed transfer would be made, will reach the term of its contract in about two years and a half.

4. With regard to the South Indian Company, we have no hesitation in expressing the opinion that no such grounds exist, in respect of either internal mismanagement, complication with other railways, or general imperial policy, as have been held in recent cases to necessitate and justify the substitution of direct management by the State for private agency. We see no reason, therefore, why, on the termination of the existing South Indian contract, in accordance with its provisions, a new contract should not be entered into with the Company upon new terms, doubtless more favourable to the State, to be eventually agreed upon. These terms might, as Your Lordship indicates, be discussed and settled as soon as deemed convenient.

5. We further beg to express our concurrence with Your Lordship that the question of the terms on which the Company's contract for their present open line should be renewed need be no obstacle to a provisional arrangement, subject, of course, as to its eventual currency to the satisfactory conclusion of the new main contract, referred to in the preceding paragraphs, with the Company, under which, whenever the financial position was favourable, they could commence operations either with funds advanced by Government or raised by means of debentures, and also make the contemplated refund by the latter means. The Moradabad extension of the Oudh and Rohilkhand Railway has recently been constructed from the proceeds of debentures, though the Company's contract is near its close. Your Lordship will, no doubt, carefully consider, however, whether so much of the provisions of such an arrangement as relate to the uncommenced lines can be framed so as to preclude inconvenient pressure for their early construction being put on Government by the Company.

6. In this case, however, as in that of the Bellary-Kistna Railway, we would represent the expediency of at once securing the advantages of united management, diminished outlay on workshops, &c., together with that of being able to ensure action promptly hereafter, whenever the financial position and the money market may be, in Your Lordship's judgment, favourable, by entering into a contract, with suitable financial clauses regarding the future, transferring the whole Cuddapah-Nellore undertaking to the Company for working and completion.

We trust that this suggestion may receive Your Lordship's early and favourable consideration.

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No. 95 (Railway), dated 16th May 1887.

From—The Government of India,

To—The Secretary of State for India.

We have had the honour to receive Your Lordship's Despatch No. 24 (Railway), dated 10th March last, relating to the estimates for the two sections of the Bellary-Kistna Railway, and the proposed transfer of that undertaking to the Southern Mahratta Railway Company for working and completion.

2. With regard to the estimates, we have first to explain that "Hindupur"



was, by a clerical error, substituted for "Bezwađa," where the word first occurs in the margin of paragraph 4 of our Despatch No. 4 (Railway) of 11th January 1887. Moreover, when that despatch was issued, we had before us only the first estimate for the Guntakul-

Guntakul-Bezwađa estimate.	.	188
Do. Hindupur, 1st estimate	.	65½
Do. do., past outlay	.	3½
Lakhs	.	257

Hindupur extension, amounting to R65½ lakhs, which had been forwarded to Your Lordship with our No. 81 (Railway) of 4th June 1886. This, together with the Guntakul-Bezwađa estimate, and the entire past outlay, including survey, which appears to have been treated as a separate item, produced a total of 257 lakhs, divisible into 142 lakhs of past outlay and 115 of future.

Subsequently to the issue of that despatch, however, the revised estimates

Guntakul-Bezwađa	.	188
Do. Hindupur, 2nd estimate	.	71½
Do. do., past outlay	.	3½
Lakhs	.	263½

for the Guntakul-Hindupur section became available, and we submitted them with the Despatch No. 24 of 1st February 1887, as promised in paragraph 4 of the Despatch of 4th June

1886, already referred to. These estimates showed an increase over the former ones of 9½ lakhs, or of 6½ lakhs, after making allowance for the past outlay. This increase, added to the first estimates, produced, together with the other two items, a total of 263½ lakhs, corresponding with that arrived at by Your Lordship.

3. With reference to the 2nd and 4th paragraphs of the despatch under reply, we beg to point out that the proposal that the whole Bellary-Kistna undertaking should be handed over for working and completion to the Southern Mahratta Company did not proceed from us but from that Company, and was referred to us for opinion by Your Lordship in Despatch No. 101 (Railway), dated 25th November 1886.

4. Regarding the arrangement itself, we are glad to find that Your Lordship fully recognises the administrative convenience and economy which we held would result from it; but we beg to represent that there is no necessity for deferring the realisation of these advantages until the money market may be in a condition favourable for the issue of the necessary debentures by the Company.

There is nothing, so far as we are aware, to hinder the immediate conclusion of a contract with the Company, transferring the undertaking to them for working and completion, provided that the financial clauses comprise arrangements, *first*, that the Guntakul-Bezwađa section should be prosecuted with the funds which the State will otherwise devote to it, until a favourable time arrives for raising in the market the 188 lakhs requisite to cover the refund of past outlay and the cost of completion; and, *secondly*, that the Guntakul-Hindupur section shall not be proceeded with until the Secretary of State may in his discretion direct, as already suggested in paragraph 4 of our Despatch No. 4 (Railway) of 11th January last. In this connection we beg to refer Your Lordship to the closing sentence of paragraph 5 of our despatch of this date relating to the Cuddapah-Nellore Railway.

5. Under the arrangement above advocated, the State would incur no greater current obligation than at present, but would receive at once the advantages already recognised, with relief from the duty of direct construction, while the necessary capital could be promptly raised by the Company under Your Lordship's sanction, at whatever moment the market seemed favourable, without the loss of time involved in the otherwise inevitable negotiations over the contract

itself. We therefore trust that this arrangement may receive Your Lordship's early and favourable consideration.

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No. 97 (Railway), dated 8th September 1887.

From—The Secretary of State for India,

To—The Government of India.

Consequent on receipt of Your Excellency's Railway letters Nos. 94 and 95, dated the 16th of May 1887, in respect to the transfer of the lines, as marginally noted, to Railway Companies, I caused communications to be addressed to the Boards of the Southern Mahratta and South Indian Railway Companies.

To Southern Mahratta Railway Company:  
Bellary-Kistna Railway.  
Guntakul-Hindupur Railway.  
To South Indian Railway Company:  
Tirupati to Dharmavaram.  
Pakal to Villupuram.

\* Letters to Southern Mahratta and South Indian Railway Companies, dated 20th and 27th July.

Ditto from ditto, dated 3rd, 4th, and 19th August 1887.

2. Copies of these communications,\* and of the replies made to them by the two Boards, are herewith transmitted for the information of your Government.

ment, from which you will perceive that in both cases the Boards are willing to accept the transfer to themselves of the lines in question on terms to be arranged. The nature of the terms will shortly form the subject of negotiation, together with the matter of the legal difficulty which is referred to by the South Indian Railway Company, and on both these points I will address you later. Meantime I deem it desirable that you should be aware that negotiations have commenced for the transfer to the Companies of the lines in question.

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No. 1062 P.W., dated 20th July 1887.

From—SIR JOHN E. GORST, Under-Secretary of State for India,

To—The Secretary, Southern Mahratta Railway Company.

With reference to the correspondence which has passed regarding the completion and working by the Southern Mahratta Railway Company of the Bellary-Kistna and the Guntakul-Hindupur Railways, I am instructed to inform you that the Secretary of State in Council is now prepared to consider any proposals which the Directors may feel themselves in a position to make for taking in hand their construction, and for working them as they are completed.

The commencement of the Guntakul-Hindupur line may have to be postponed, but the Bellary-Kistna line, a section of which is now being worked by the Company under a recent agreement, might probably be transferred to them for completion in such manner and at such times as the Government may prescribe.

Viscount Cross will also be glad to receive the views of the Directors with respect to the terms on which they would be prepared to undertake the completion as well as the maintenance and working of the lines in question.

The estimated cost of the Bellary-Kistna line is £1,85,00,000, of which about £1,42,00,000 represents past expenditure. That of the Guntakul-Hindupur is £74,25,000, of which £3,50,000 has been expended.

I am to add that any further information which may be in this office, and which the Directors may desire to obtain regarding the present position of the undertaking, shall be placed at their service.

No. 92-87, dated London, the 3rd August 1887.

From—EDWARD Z. THORNTON, Esq., Secretary, Southern Mahratta Railway Company, Limited,

To—The Under-Secretary of State for India.

In reply to your letter No. 1062 P.W. of the 20th ultimo, enquiring on what terms this Company would undertake to complete and work the State Railway in course of construction from Guntakul to Bezwada and to Hindupur, I am directed to state that the Board will be ready to recommend their shareholders to take over and work these two Railways on the same terms as they carried out the West Deccan Railway and other extensions of their system, the necessary capital being raised on debentures either by the Company or Government, as may be found most convenient. The interests on these debentures and their repayment to be guaranteed and paid in full by the Secretary of State out of the revenues of India.

The Board will, if it should suit the Government of India, accept, as part of the arrangement, and on the rules that are followed in interchanges of stock between State Railways, the metre-gauge rolling-stock now on the Nagpur-Chhatisgarh Railway, for which it is believed the Bengal-Nagpur Railway will have no use when their line is converted to broad gauge, in about twelve months' time.

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No. 1061 P.W., dated 27th July 1887.

From—SIR JOHN E. GORST, Under-Secretary of State for India,

To—The Managing Director, South Indian Railway Company.

I am directed to inform you that the Secretary of State for India has been in communication with the Government of India on the subject of your letter dated the 2nd March last, and that it is deemed expedient by that Government that, if satisfactory terms can be arranged, the agency of the South Indian Railway Company should be employed for the construction and working of certain lines of railway in Southern India, which, combined with those now in the hands of the Company, could conveniently be managed as one system. I am to add that Viscount Cross concurs in this view.

In their letter above referred to the Board allude to the approaching termination of the first term of the contract with the Secretary of State, and point to the present time as being favourable "to determine whether, and on what basis, the existence of the Company should be prolonged . . . for the purpose more especially of working the combined system" of railways therein specified. Upon this point I am desired to state that Viscount Cross is not prepared to interfere with the expiry of the present contract in accordance with its provisions, but being of opinion that any new arrangement should provide for carrying out and working the projected lines of railway from Tirupati (Renigunta) to Dharmavaram, 166 miles, and from Pakal to Villupuram, 135 miles, should it be finally determined to undertake them, he requests to be informed whether, in anticipation of the action which the Government may decide to take in the year 1890, with regard to the purchase of the Company's lines, the Board are willing to enter into an arrangement by which they would undertake to construct the above-mentioned lines, and eventually to work them, as sections are completed, under a new agreement, as part of the South Indian Railway Company's system.

No. 1512, dated London, the 4th August 1887.

From—H. W. NOTMAN, Esq., Managing Director, South Indian Railway Company,

To—The Under-Secretary of State for India.

I have the honour to acknowledge receipt of Sir John Gorst's letter No. 1061 P.W., dated 27th July 1887, which was laid before the Board of Directors of this Company at their meeting on the 2nd instant.

In reply, I am instructed to state that the Directors are gratified to learn that it is in contemplation, if satisfactory terms can be arranged, to employ the agency of the South Indian Railway Company for the construction and working of certain lines of railway in Southern India, which, combined with those now in the hands of the Company, could, it is thought, be conveniently managed as one system.

The Directors are prepared, in anticipation of the action, if any, which the Government may decide to take in the year 1890, with regard to the purchase of the Company's lines under the provisions of the present contract, to enter into a new arrangement for the construction of the lines\* referred to, and eventually for working them as sections are completed.

The Board have no doubt that, under existing statutory powers, the Company is in a position to work such lines, but it is open to some question whether it would not be *ultra vires* in them to undertake, as agents only, the construction of lines in which they have no proprietary rights. In order to solve this doubt the Directors have referred the question to their legal advisers for opinion, and they have taken the same opportunity of ascertaining whether, under such circumstances, the Company has power to raise money for the purpose in question should the Secretary of State wish them to do so in preference to their being supplied with funds by the State.

On receiving a reply to these references the Directors will again address the Secretary of State in Council on the subject.

Meanwhile, the Board would be glad to be placed in possession of some general idea of the terms of the proposed new arrangement, which will receive their most careful consideration.

Should the Directors be advised that it is not within the existing powers of the Company, as agents only, either to construct the lines in question or to raise money for the purpose, they propose, with the sanction of the Secretary of State in Council, to take the earliest opportunity of applying to Parliament for an Act to enable them to do so.

The Directors would add that they are prepared at once to undertake the completion of the surveys, and to make such other preliminary arrangements for carrying out the works as may be desired. For this they have powers under section 14 of 21 & 22 Vict., cap. 138.

No. 1516, dated London, the 19th August 1887.

From—H. W. NOTMAN, Esq., Managing Director, South Indian Railway Company,

To—The Under-Secretary of State for India.

Referring to the letter addressed to the Under-Secretary of State for India by the Board of Directors of this Company, No. 1512, dated 4th August 1887,

I now beg to enclose a copy of the questions submitted to Council by the legal advisers of the Company, and of the opinion thereon regarding the powers of the Company to construct and work railways other than those forming part of their own system.

The matter will be considered on the reassembling of the Board, after the adjournment which has now taken place.

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No. 5, dated the 16th August 1887.

From—MESSES. FRESHFIELDS AND WILLIAMS,

To—The Secretary, South Indian Railway Company.

We beg to hand you copy of the questions submitted to Mr. Latham and Mr. Armitstead, with a copy of the opinion of these gentlemen upon the question raised on the recent correspondence with the Secretary of State in Council for India. You will observe that in effect the Council concur in the views expressed by us in our letter to the Managing Director of the 8th of June last.

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You are requested to advise the Board of Directors—

*1st.*—Whether, under their existing constitution, the Company are authorised, either as contractors or as agents only, to undertake the construction of State Railways in which they neither have nor are intended to have any proprietary rights.

*2nd.*—Whether they have power to raise capital either by borrowing or by the issue of debentures or shares or otherwise, for the purpose in question, should the Secretary of State in Council desire them to do so in preference to the Government supplying the Company with the necessary means from State funds.

*3rd.*—You are requested to advise the Company, if they do not possess these powers, as to the manner in which they should acquire the necessary authority, and to advise generally in the matter.

*Opinion.*

1. If the Company are authorised either as contractors or as agents only to undertake the construction of any railway, their authority can only be derived from the original Act of 1858: the Act of 1874 does not enlarge the Company's power in this respect, and the Act of 1879 does not extend to construction at all. The power under the Act of 1858 is for the Company to afford railway communication to the provinces of Southern India, and such other places as they may from time to time determine, "by constructing, maintaining, and working railways." In our opinion the true interpretation of this power is only to enable the Company to construct, maintain, and work railways of its own. But the words are very wide and are capable of being interpreted differently.

2. The borrowing powers under section 16 of the Act of 1874 would be available for the present purpose if it is *intra vires*, but inasmuch as the proposed new railway would not be part of the property of the Company, it would afford no additional security to the lenders unless the Government of India concur in giving a charge.

3. The necessary additional powers can only be obtained by Act of Parliament, but it may, however, be worth the Company's while to obtain the opinion of the Court on the first question before us. Such an opinion could be obtained with very little delay after the long vacation.

WILLIAM LATHAM.

F. E. ARMITSTEAD.

16th August 1887.

No. 2 Ry., dated 5th January 1888.

From—The Secretary of State for India,

To—The Government of India.

With reference to my Railway Despatch No 97, dated the 8th of Sep-

\* Letter to Company, dated 2nd November 1887.

Ditto from ditto, dated 18th November 1887.

Ditto to ditto, dated 6th December 1887.

Ditto from ditto, dated 15th December 1887, No 147.

Ditto from ditto, dated 19th December 1887, No. 149.

Letter to ditto, dated 19th December 1887.

Ditto from ditto, dated 22nd December 1887.

† Secretary of State to Viceroy, dated 16th December 1887.

“Southern Mahratta Railway Company have arranged to take over Bellary-Kistna Railway, 1st January. Act accordingly. Despatch follows.

tember 1887, I transmit herewith, for information of your Government, copies of correspondence \* which has passed, since the issue of that despatch, between this Office and the Southern Mahratta Railway Company, showing the terms which have been arranged for the transfer to that Company of the Bellary-Kistna State Railway, with effect from the 1st January 1888.

2. The fact of the transfer having been arranged was notified to your Government by my telegram of the 16th December 1887,† and I have now to inform you that, in consequence of your telegraphic request, dated 17th December 1887, arrangements have been made for the transfer to the Southern Mahratta Railway Company of the Chief Engineer and staff now employed on the State line, the Agent to the Company in India being duly advised of the fact.

3. The terms of transfer as described in the correspondence between this Office and the Southern Mahratta Railway Company explain themselves, and will be embodied in a deed.

4. I have nothing further to add beyond that the price of issue of the Company's new stock of 500,000*l.* was fixed at 6 per cent. premium, the money being called up in full in England on or before 1st February 1888, and in India on or before 1st March 1888, interest at 4 per cent. being allowed by Government on all payments, less premium, into the Bank of England or Bank of Bombay from dates of payment.

[ENCLOSURES.]

No. 1.

No. 2110 P.W., dated India Office, London, the 2nd November 1887.

From—The Under-Secretary of State for India,

To—The Secretary, Southern Mahratta Railway Company.

With reference to your letter of the 3rd August 1887, stating the terms on which the Directors of the Southern Mahratta Railway Company would be prepared to recommend their shareholders to take over and work the railways from Guntakul to Bezwada and to Hindupur, I am directed to inform you that the Secretary of State for India is prepared to enter into negotiations with the Board for the completion and working by the Company of the line from Guntakul to Bezwada, leaving the line from Guntakul to Hindupur for future consideration.

I am, however, to State that Viscount Cross is of opinion that the capital required for the completion of the former line, estimated at present at about 500,000*l.*, should be raised by the issue of shares, and I am to request that you will inform me upon what terms the Directors consider they would be able to raise that sum by this means.

## No. 2.

No. 138-87, dated London, the 18th November 1887.

From—The Secretary, Southern Mahratta Railway Company,

To—The Under-Secretary of State for India.

I am directed to acknowledge receipt of your letter No. 2110 P.W., dated 2nd instant, stating that the Secretary of State for India in Council is prepared to enter into negotiations with this Company for the completion and working of the Bellary-Kistna Railway, 278 miles in length, but that he considers the capital sum needed for that purpose, about 500,000*l.*, should be raised by an issue of new shares.

In reply, I am instructed to state that the Board will be prepared to recommend to their shareholders to take over the Bellary-Kistna Railway, with its stores and equipment, from the 1st January 1888, to complete, equip, and work it on the following conditions, to which are attached marginal explanations:—

*Explanations.*

The Board are advised that it is necessary, to ensure the stock being taken up by the shareholders, to leave a margin to this extent, to allow for the depreciation in value certain to ensue in consequence of new stock being thrown on the market. In issuing it will be desirable to require accepting shareholders to pay up at once 20 per cent. on the value of their new scrip, and the balance in a month. Making the new scrip carry interest from the same day as the old will render it more marketable, and this will be effected by shareholders paying back interest.

This is in accord with ordinary practice.

This is understood to be the intention of the Secretary of State.

*Conditions.*

1. 500,000*l.* additional share capital to be raised by the issue to the present shareholders of 500,000*l.* stock in proportion to their holdings, at a premium to be settled with the Secretary of State at date of issue, but so regulated that it shall be about two per cent. less than the selling market price of the Company's stock *ex dividend*. The stock to be issued on or after the 1st January 1888, and to carry interest from the date the money is paid into the Bank of England.

2. The premium to be carried to the credit of the Company as capital not bearing interest.

3. The amount expended by the Secretary of State to the 1st January 1888, inclusive of liabilities on all orders given out to dealers and manufacturers for stores and for unpaid wages at that date, to be adjusted by the Secretary of State, and to be debited for purposes of account to the Company's Capital Account, but not to bear interest under Section 30 of the Company's original Contract as varied by Section 2 of the West Deccan Contract.

*Explanations.*

The Board have no means of judging what capital will be needed to finish the Bellary-Kistna Railway, beyond the 500,000*l.* now to be raised.

It is not expected that the guarantee will have any operation. The accounts for the last half-year show on the Southern Mahratta Railway a surplus of 2,612*l.*, after repayment of the sum advanced by Government for the additional temporary five shillings per cent. interest on the Company's capital for the half-year.\* This result has been attained with an average of only 577 miles open to traffic. The total length in the coming half-year will be 765 miles, exclusive of 90 miles in the Nundyal Extension, and consists of sections passing through richer districts than those hitherto open. Better results may, therefore, confidently be expected, as there is no increase of share capital. It is undesirable to give the Company a guarantee limited to the new issue, as the Board are assured that any separation in the character of the issues of stock would be prejudicial to their values in the market, for it would practically create two stocks, one of very small amount. It is desirable, however, to have the clause, as it will give the shareholder confidence in embarking in this new venture.

Rs12 is now far too low a sum at which to value a sovereign; Rs14 is nearer the mark.

*Conditions.*

4. Any further capital sum needed for the completion and full equipment of the Bellary-Kistna Railway in excess of the sum to be raised now by issue of 500,000*l.* stock, to be raised by issue of debentures on the same terms as debentures may be issued under the terms of Section 5 of the Bellary-Guntakul Contract.

5. The limited guarantee of 4 per cent. interest on the Company's share capital given under the Company's Contract, Sections 27 and 42, last sentence, also part of Section 4 of West Deccan Contract, to be extended to 31st December 1890, and to embrace the new capital.

6. The rate of exchange laid down in Section 26 of the Company's Contract, *viz.*, Rs12 to the £ to be altered to Rs14 to the £ in respect of the new share capital,—that is to say, the amount to be

\* There is some confusion in the clauses bearing on this point. The guarantee of the extra half per cent. is to the 1st June 1889, while the proviso in Section 42 of the Company's Contract runs to 30th June 1889. The difference is of no practical moment, but it would be as well if the date throughout should be to the 30th June 1889. It arises from the change made in date of the payment of the guaranteed interest, when that interest became payable in sterling in London instead of rupees in India.



*Explanations.**Conditions.*

placed to the credit of the Company's Capital Account in India in rupees to be 14, not 12 times the sum paid in, in sovereigns, in England. The same rule to be applicable to stock on the Indian share list. The amount of such rupee stock now held is Rs94,800.

7. Other conditions to follow the lines of the Southern Mahratta Contract.

In conclusion, I am requested to ask that an early answer may be given to this letter, in order that the subject may be brought before the shareholders at the general meeting next month.

**No. 3.**

No. 2357, dated India Office, London, the 6th December 1887.

From—The Under-Secretary of State for India,

To—The Secretary, Southern Mahratta Railway Company.

I am desired to acknowledge the receipt of your letter, dated the 18th ultimo, stating that the Directors of the Southern Mahratta Railway Company are prepared to recommend their shareholders to take over the Bellary-Kistna Railway from the 1st January next, and to complete, equip, and work it on the general conditions of the Southern Mahratta Contract; and that with regard to

\* 500,000*l.* additional share capital to be raised by the issue to the present shareholders of 500,000*l.* stock in proportion to their holdings at a premium to be settled with the Secretary of State at date of issue, but so regulated that it shall be about two per cent. less than the selling market price of the Company's stock ex dividend. The stock to be issued on or after the 1st January 1888, and to carry interest from the date the money is paid into the Bank of England.

2. The premium to be carried to the credit of the Company as capital not bearing interest.

3. The amount expended by the Secretary of State to the 1st January 1888, inclusive of liabilities on all orders given out to dealers and manufacturers for stores and for unpaid wages at that date, to be adjusted by the Secretary of State, and to be debited for purposes of account to the Company's Capital Account, but not to bear interest under Section 30 of the Company's original Contract as varied by Section 2 of the West Deccan Contract.

4. Any further capital sum needed for the completion and full equipment of the Bellary-Kistna Railway in excess of the sum to be raised now by issue of 500,000*l.* stock, to be raised by issue of debentures.

5. The limited guarantee of 4 per cent. interest on the Company's share capital given under the Company's Contract, Sections 27 and 42, last sentence, also part of section 4 of West Deccan Contract, to be extended to 31st December 1890, and to embrace the new capital.

6. The rate of exchange laid down in Section 26 of the Company's Contract, viz., Rs12 to the £, to be altered to Rs14 to the £ in respect to the new share capital,—that is to say, the amount to be placed to the credit of the Company's Capital Account in India in rupees to be 14, not 12 times the sum paid in, in sovereigns, in England.

7. Other conditions to follow the lines of the Southern Mahratta Contract.

the sum of five hundred thousand pounds (500,000*l.*) required for carrying out its construction, the Board will take the necessary measures for raising it by means of shares, on the conditions specified in the margin \*

In reply, I am instructed to inform you that the Secretary of State in Council is prepared to agree to these terms, with the omissions noted upon them, and, upon hearing that the Board of the Southern Mahratta Railway Company assent, will give the necessary instructions for the preparation of the contract embodying them.

With regard to condition 4, the Directors must be reminded that the special provision in the Bellary-Guntakul Contract for exempting the Company for 21 years from the payment of interest, if the Secretary of State should be compelled to discharge these debentures, was given under exceptional circumstances, and he is unable to assent to its repetition in this case.

The Secretary of State is of opinion also that the latter part of Condition 6, which applies the proposed new rate

of exchange to the portion of the old capital held in the Indian share list, should be omitted.

### No. 4.

No. 147, dated London, the 15th December 1887.

From—EDW. Z. THORNTON, Esq., Secretary, Southern Mahratta Railway Company, Limited,

To—The Under-Secretary of State for India.

In reply to your letter, No. P. W. 2357, dated 6th December 1887, I am

1. That the Directors of the Company be and are hereby authorised to conclude an Agreement with the Secretary of State for the acquisition by the Company of the Bellary-Kistna State Railway, on such terms as the Secretary of State and Directors shall agree.

2. That the capital of the Company be and is hereby increased by 50,000 shares into 25,000 shares of 20/ each, and that the Directors be and are hereby authorised to issue such shares at and upon such price, terms, and conditions as the Secretary of State and the Directors shall agree.

3. That on the payment up, in full, of such 25,000 shares, the Directors be and are hereby authorised to convert the same into stock.

directed to inform you that the shareholders of this Company, at a general meeting held this day at the Cannon Street Hotel, having passed the resolutions noted in the margin, the Board now agree to take over the Bellary-Kistna Railway, with its stores and equipments, on the conditions stated in the accompanying circular to the shareholders, which correspond with those laid down in your letter under reply.

The Board hope the Secretary of State will give the necessary orders, by telegram, to the Government of India. This Company have advised their Agent.

### No. 5.

No. 149, dated London, the 19th December 1887.

From—EDW. Z. THORNTON, Esq., Secretary, Southern Mahratta Railway Company, Limited,

To—The Under-Secretary of State for India.

Referring to my letter accepting, on behalf of the Directors, the proposal of the Secretary of State to incorporate the Bellary-Kistna State Railway with the undertaking of this Company on certain conditions, I am now directed to forward a letter from the Company's brokers, and to suggest that the price of the new stock to be issued to the shareholders be fixed at 6 per cent. premium, and that the money be called up, in full, in England on or before the 1st February 1888, and in India on or before the 1st March 1888, interest at 4 per cent. being allowed by the Secretary of State on all payments, less premiums, into the Bank of England or Bank of Bombay to his credit from the date thereof.

Dated 16th December 1887.

From—MESSRS. S. B. SCOTT & Co.,

To—The Secretary, Southern Mahratta Railway Company.

We take the liberty of suggesting immediate application to the Secretary of State for India to agree to the price at which the new issue of shares shall be made to the present proprietors, since it will not be practicable to send out the circulars offering the allotments until such price is fixed.

The stock is now quoted "ex divd.," and the selling price is 108 ; 2 per cent. off will leave 106, which we suggest is at present the fair price under the agreement with the India Office for the issue.

**No. 6.**

No. 2578 P.W., dated 19th December 1887.

From—J. A. GODLEY, Esq., Under-Secretary of State for India,

To—The Secretary, Southern Mahratta Railway Company.

In reply to your letter No. 149-87, dated the 19th December 1887, in respect to the issue of 500,000*l.* new stock by the Southern Mahratta Railway Company, I am directed by the Secretary of State for India in Council to state, for information of the Board of that Company, that he sanctions the issue of such stock to shareholders at 6 per cent. premium. His Lordship in Council also assents to the further conditions named in your letter under reply.

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**No. 7.**

No. 2564 P.W., dated India Office, London, the 19th December 1887.

From—J. A. GODLEY, Esq., Under-Secretary of State for India,

To—The Secretary, Southern Mahratta Railway Company.

I am directed by the Secretary of State for India to inform you that upon receipt of your letter of the 15th instant, No. 147, a telegram was sent to the Viceroy, stating that the Southern Mahratta Railway Company have arranged to take over the Bellary-Kistna Railway on the 1st January 1888.

To this telegram a reply has been received requesting that the Board may be asked to arrange for the transfer to the Company of the Chief Engineer and superior establishments now employed on the line in question.

Lord Cross will be glad to know whether the Directors are ready to accede to this proposition, and, if so, to request that they will make the necessary communication to that effect by telegram.

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**No. 8.**

No. 155, dated London, the 22nd December 1887.

From—EDW. Z. THORNTON, Esq., Secretary, Southern Mahratta Railway Company, Limited,

To—The Under-Secretary of State for India.

In reply to your letter No. 2564 P.W. of the 19th instant, requesting the Board of Directors to arrange with their Agent, if they think it desirable, for the transfer to the Company of the Chief Engineer and superior establishment now employed on the Bellary-Kistna Railway, I am directed to state that the following telegram was this day despatched to the Agent and Chief Engineer of this Company:—

“You may take Chief Engineer and staff, Kistna Railway. Letter follows.”

No. 119 Railway, dated 11th November 1887.

From—The Secretary of State for India,

To—The Government of India.

In continuation of my Railway Despatch No. 97, dated 8th September 1887, I

\* Letter from the Company, dated 19th October 1887.

Ditto to ditto, dated 8th November 1887.

forward herewith, for Your Excellency's information, copy of a correspondence\* with the Directors of the South Indian Railway Company regarding the measures which the Board have decided to adopt† in view of placing themselves in a position to carry out the construction of the Tirupati-Dharmavaram and Pakhal-Villupuram lines, and also

+ No. 691, dated 21st October 1887.

extract from a letter‡ in which the Board have allowed their Agent on the subject.

2. Your Railway Despatch No. 169, dated 9th September 1887, and a revised abstract estimate of the cost of constructing the last-mentioned railway, has been forwarded for the information of the Directors of the South Indian Railway.

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No. 1533, dated 19th October 1887.

From—HENRY W. NOTMAN, Esq., Secretary, London Board, South Indian Railway Co.,

To—The Under-Secretary of State for India.

With reference to Board's letter No. 1512, dated 4th August 1887, the Board has had under consideration the opinion of Counsel, of which a copy was forwarded with their letter No. 1516, dated 19th August 1887, as to the powers of the Company, under their existing constitution, to construct for the State such lines as have formed the subject of recent correspondence.

It will be seen from that opinion that Counsel consider that the true interpretation of the words of the Act would operate in restriction of the Company constructing lines other than those embraced in their own system, but they admit that the words of the enacting clause are very wide, and are capable of being interpreted differently.

In order to remove all doubt and difficulty in the matter, the Board has decided to make application to Parliament in the ensuing session for an Act to enable them to undertake such works as are now contemplated, to raise and apply the necessary capital, and for other purposes, and they have instructed their solicitors to give the statutory notices accordingly, after communication with the legal adviser of the Secretary of State.

With the view of obviating, so far as can be done in present circumstances, any delay in proceeding with the works in question, the Directors have instructed their Agent in India to place himself in communication with the Government there, in view to the adoption in concert with them of such preliminary measures as may be practicable, pending the removal of any legal difficulties which may now exist in carrying the construction of the lines to completion.

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No. 1922 P.W., dated 8th November 1887.

From—J. A. GODLEY, Esq., Under-Secretary of State for India,

To—The Secretary, London Board, South Indian Railway Co.

I am directed by the Secretary of State for India in Council to acknowledge the

receipt of your letter of the 19th October, No. 1533, stating the measures which the Board of the South Indian Railway Company have decided to take in connection with the construction of the lines mentioned in Sir John Gorst's letter to you of 27th July last.

In reply, I am to state that Viscount Cross concurs in the decision come to by the Board, to make application to Parliament in the ensuing session for an Act to enable them to undertake such works as are now contemplated, and to raise and apply the necessary capital, and also in the instructions which they have given their Agent in India to place himself in communication with the Government of India, in view to the adoption of such preliminary measures for the construction of the line in question as may be practicable under the circumstances.

I am also to state that Viscount Cross will be prepared to assist the Directors in obtaining the Parliamentary powers necessary for the object in view.

A copy of a despatch\* and its enclosure recently received from the Government of India, containing a revised estimate of the cost of constructing the Pakal-Villupuram Railway, is forwarded herewith, for the information of the Board of Directors.

\* No. 169 Ry., dated 9th September 1857.

constructing the Pakal-Villupuram Railway, is forwarded herewith, for the information of the Board of Directors.

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*Extract from a Letter from the Directors of the South Indian Railway Company to their Agent in India, No. 651 of 21st October 1857.*

#### CONSTRUCTION OF STATE RAILWAYS.

As some doubts exist as to the power of the Company, under their present constitution, to construct State lines such as those which have recently formed the subject of correspondence, the Directors have resolved to apply to Parliament in the ensuing session for an Act to remove these doubts, and to enable them to enter into fresh contracts with the Secretary of State in Council, on such terms as may be deemed to be expedient.

In order, so far as present circumstances will allow, to prevent any delay in the works being immediately proceeded with, the Directors desire that you will place yourself in communication with the Government of Madras, and concert with them such preliminary measures as, pending the removal of the legal difficulties referred to, may be practicable. The Board believe that under the provisions of the Act, 21 & 22 Vict., cap. 138, section 14, the Company has statutory powers to make surveys and preliminary arrangements for such works as those in question, although there is at present no contract for the execution of the same, and they have received authority from the shareholders to make such arrangements, as will be seen from the following Resolution, which was passed at the special general meeting of the Company held on 28th June last :—

“The Company approve and confirm, and also hereby authorise the Board of Directors to continue the negotiations, and to effect such terms and conditions with the Secretary of State in Council for the working by the Company of the Nellore-Tirupati section of the Cuddapah State Railway as in their judgment and discretion they think proper. The Company also hereby approve of the proposals made to the Secretary of State in Council to construct and work the State Railways from Tirupati *via* Kadiri to Dharmavaram, being an extension of the Cuddapah-Nellore line, and from Pakal Junction on the Tirupati-Dharmavaram line to Villupuram, and the Board are hereby authorised to enter upon the necessary negotiations with the Secretary of State in Council in reference thereto, and to effect such terms and conditions with the Secretary of State in Council as in their judgment and discretion they think proper.”

No. 60 (Railway), dated 7th June 1888.

From—The Secretary of State for India,

To—The Government of India.

In pursuance of the intimation conveyed to you by my Railway Despatch No. 119, dated 10th November 1887, I have now to inform you that an Act\* has been passed, entitled the "South Indian Railway (Additional Powers) Act, 1888," by which Act the South Indian Railway Company is enabled to extend its system, and to enter into arrangements with Government for taking over and working the existing Cuddapah-Nellore State line, and constructing and working the suggested Tirupati-Dharmavaram and Pakal-Villupuram sections.

2. The Board of the Company have applied to be informed what measures should be taken for carrying out such portions of the projected lines as it is thought desirable to undertake; and I request, therefore, that I may be furnished with the views of Your Excellency's Government on this application.

3. I take this opportunity of drawing the attention of your Government to a communication addressed by the Board of the Madras Railway Company to their Agent in India, No. 794, dated 20th April 1888, copy of which is herewith forwarded, setting forth the views of that Board in respect to their Agency being also employed in the extension of certain railways in Southern India.

*An Act for conferring additional powers on the South Indian Railway Company, and for other purposes.*

[ROYAL ASSENT, 30TH APRIL, 1888.]

Whereas it is expedient to extend the powers of the South Indian Railway Company in relation to the construction, maintenance and working of railways, and the raising of capital and otherwise;

And whereas the said objects cannot be effected without the authority of Parliament;

**MAY IT THEREFORE PLEASE YOUR MAJESTY,**

That it may be enacted and be it enacted by the Queen's Most Excellent Majesty by and with the advice and consent of the Lords Spiritual and Temporal and Commons in this present Parliament assembled and by the authority of the same as follows:

1. This Act may be cited for all purposes as The South Indian Railway (Additional Powers) Act, 1888. Short title.

2. The provisions of The Companies Clauses Consolidation Act, 1845, with respect to the consolidation of shares into stock, and Parts I. and II. of The Companies Clauses Act, 1863, as amended by The Companies Clauses Act, 1869, are incorporated with this Act, and shall have effect subject to the provisions of this Act. Incorporation of parts of Companies Clauses Acts.

3. In construing this Act and the several Acts incorporated herewith, the following words and expressions have the following meanings unless excluded by the subject or context, to wit:

The expression "the Company" means the South Indian Railway Company;

The expressions "the special Act" means this Act;

The expression "the Act of 1868" means an Act passed in the thirty-first year of the reign of Her present Majesty, cap. 26, intituled "An Act to enable certain Guaranteed Indian Railway Companies to raise Money on Debenture Stock;"

The expression "Secretary of State in Council" means the Secretary of State in Council of India ;

The word "India" means Her Majesty's territories in India and any territory in the East Indies belonging to any Native Prince or State in alliance with Her Majesty or to any European power ;

The word "Railway" includes a railway and the telegraphs and works connected therewith ;

The word "person" includes Corporation ;

and the several words and expressions to which by The Companies Clauses Consolidation Act, 1845, meanings are assigned have in this Act the same respective meanings. Provided that any expression in the said incorporated Acts to which a special meaning is assigned by The South Indian Railway Act, 1874, shall have the same special meaning in this Act.

Power to enter into agreements.

4. From and after the passing of this Act the Company may from time to time enter into with the Secretary of State in Council and carry into effect, and may with the sanction of the Secretary of State in Council enter into with the Government of any Native State or any other Government, Public Body, or Person, and carry into effect, any contract or agreement for all or any of the following purposes, that is to say :

For the construction, equipment (including the supply of plant, machinery, and rolling stock), improvement, maintenance, management, or working by the Company as Agents or Contractors for the Secretary of State in Council, or for any such Government, Public Body, or Person as aforesaid, of any railway or part of a railway in India, whether forming part of or connected with the existing undertaking of the Company or not, and for the purpose of carrying into effect any such Contract or Agreement it shall be lawful for the Company to exercise all such powers and do all such things as may be necessary or incidental to any of the matters aforesaid.

Power to raise money.

5. For the purpose of carrying into effect any contract or agreement entered into under the powers of this Act, it shall be lawful for the Company, with the sanction of the Secretary of State in Council (but not otherwise), from time to time to raise such moneys as they may require, either by the creation and issue of new ordinary shares or stock, or new preference shares or stock, or by borrowing on mortgage, or bond, or debentures, or debenture stock, or by such one or more of those methods as the Company may, with such sanction as aforesaid, determine. Subject to the provisions of this Act all debenture stock authorised by this Act shall be created and issued under and subject to the provisions of the Act of 1868, which shall for this purpose be construed as if the Company were expressly included among the Railway Companies therein named.

New shares or stock subject to the same incidents as other shares or stock.

6. Except as by this Act otherwise provided, any new shares or stock created by the Company under the provisions of this Act, and the holders thereof respectively, shall be entitled and subject respectively to the same powers, rights, privileges, liabilities, and incidents in all respects as if such new shares or stock were part of the existing capital of the Company of the same class or description.

Power to charge debenture stock by mortgage or any part of the Company's undertaking.

7. It shall be lawful for the Company with the sanction of the Secretary of State in Council to make any Debenture Stock which may be issued by them under the provisions of this Act a charge on the whole undertaking of the Company or (notwithstanding anything to the contrary contained in the Act of 1868) upon any separate part or parts of such undertaking.

Application of money raised under Act.

8. All money raised by the Company under the provisions of this Act shall be applied only for the purposes of this Act, or of contracts or agreements authorised by this Act to which capital is properly applicable.

Power to debenture stock to be charged on part

9. Debenture stock charged on any separate part or parts of the undertaking of the Company shall not be a charge on any other part or parts of the undertaking.

or on the undertaking generally, and a statement to that effect shall be inserted in every certificate of such debenture stock. only if under-  
taking.

10. So long as any debenture stock is charged on any separate part or parts of the undertaking by the Company, separate accounts shall be kept of the capital and revenue of each separate part of the undertaking of the Company so charged in the same form as nearly as may be and subject to the same conditions as such accounts would be kept if each separate part of the undertaking belonged to an independent Company. Provision for  
separate  
accounts.

11. If any question arises as to what constitutes a separate part of the undertaking of the Company within the meaning and for the purposes of this Act, the Secretary of State in Council may decide such question, either on application by the directors or by any mortgage or bond or debenture or debenture stock holder or any shareholder of the Company or without any such application; and his decision shall be final and binding to and for all intents and purposes. Secretary of  
State to decide  
what is separate  
part of under-  
taking.

12. The Company may from time to time apply for or towards all or any of the purposes of this Act or of any contract or agreement authorised by this Act any moneys which they may receive from the Secretary of State in Council or from the Government of any Native State or from any other Government, public body, or person, as well as any sums of money which they have already raised or are authorised to raise by any of their Acts, and which are not required for the purposes (if any) to which they are by those Acts made specially applicable. Company may  
apply funds.

13. Nothing in this Act shall prejudicially affect the rights of the existing shareholders under the contract dated the 16th day of December, 1873, and made between the Secretary of State in Council of India of the first part, the Great Southern of India Railway Company of the second part, and the Carnatic Railway Company Limited, of the third part, and which contract is contained and set forth in the schedule to The South Indian Railway Act, 1874. Saving for exist-  
ing share-  
holders.

14. The costs, charges and expenses of and incidental to the obtaining and passing of this Act shall be paid by the Company. Costs of Act.

No. 794, dated 20th April 1883.

From—JULIAN BYRNE, Esq., Secretary, Madras Railway Company,  
To—The Agent and Manager, Madras Railway, Madras.

Looking at the map which accompanies the Administration Report of the Public Works Department, Railway Branch, Madras, 1886-87, the Board observe that extensions are projected in various directions, the carrying out of which will, the Board apprehend, very materially affect the traffic of the Madras Railway. If it be determined to construct these contemplated lines by other agency than this Company, the Madras Railway will be exposed to competition on all sides, and, it is feared, may lose very heavily. The pecuniary interests of Government in this Railway, no less than those of the Company, should be sufficient to ensure caution in proceeding with other lines which could seriously interfere with the development of the Madras line.

2. I am desired, therefore, to request your early and special attention to this question, and that you will submit it to the Government of Madras for their careful consideration, in the hope that the claims of this Company to the construction and working of any projected extensions on the metre gauge, or otherwise, within the territory which may be properly regarded as coming within the Madras Railway district, may be favourably entertained.

3. Of the proposed lines described on the page prefixed to the Administration Report above quoted, the first on the list, *viz.*, the Hindupur extension, to be prolonged, no doubt, eventually to Bangalore, seems to the Board to be one which is eminently within the province of the Madras Railway Company to undertake.



The direct connection of the important city and military station of Bangalore with Bombay and Calcutta, by means of a chord line on the standard gauge from the junction at Gundlukul, seems to the Board to be a necessary completion of the main arterial railway system of India. To construct this extension by an agency distinct from the Madras Railway Company would not only very seriously affect the traffic revenue of the Madras Railway, but, if done on the metre gauge, would interfere with the political and military value of the communication. The Board very earnestly desire that the attention of the Government and of the military authorities may be invited to their proposal to undertake this line on the standard gauge, and trust that it will be viewed with favour.

4. The Board would refer to the opinion expressed on the question of gauge by the Select Committee on Indian Railways in their Report of 1884, para. 21, page 10, as being applicable to this case.

With regard to the question of gauge, your Committee are of opinion that all the leading trunk lines, with their principal feeders, should be on the broad gauge, the metre gauge being, as a rule, confined to tracts of country where that system is already in use, or to short branches where the great expense of the standard gauge is not justified by the advantages the metre gauge offers.

5. There are other branches and extensions which this Company are desirous to undertake, and which, provided they had the management and control of them, they would be prepared to construct even

on the metre gauge, if preferred by the Government to the standard gauge. These are the surveyed line to Cochin from Shoranur, the extension from Palghat to Pollachi and Dindigul, a branch to the town of Salem and Namkal, and several others.

6. The Board would suggest that estimates be prepared both for the metre and broad gauges of such lines as, in your opinion, it will be desirable for this Company to undertake, it being understood that the standard gauge would be constructed at first in the lightest manner consistent with efficiency and economy in working.

7. The Board would be prepared also to take over the working of the line from Nellore to Tripati, which traverses a region within the Madras Railway area, rather than that of the South Indian Railway.

8. The extension of the broad-gauge line to the military station of Cannanore has been under consideration, and also the re-alignment of the portion of the South-West line from Sholinghur to Mailpati so as to take in several important towns, but sufficient data are not yet to hand to show the probable financial results of these extensions.

9. The capital at present standing to the credit of the Company will be expended in completing the several large bridges on the North-West line and other sanctioned works. But there still remain, under the Company's Act of Parliament, 17 Vict., Session 1854, borrowing powers to the extent of some three millions sterling, and the Secretary of State might, the Board hope, be disposed to authorise the issue, from time to time, of debentures for the construction of such extensions as may be shown to be desirable, and which have received the approval and sanction of the Government of India.

No. 77 (Railway), dated 13th July 1888.

From—The Government of India,

To—The Secretary of State for India.

The Government of Madras has forwarded to us a copy of a despatch\* which that Government has addressed to Your Lordship, and in which, in transmitting correspondence regarding the agency by which certain famine protective lines in that Presidency should be constructed and worked, His Excellency the Governor in Council expresses an

\* Public Works Department Despatch from the Government of Madras to the Secretary of State, No. 77, B, dated 23rd May 1888.

opinion that it is of paramount importance to secure the freest possible communication between the districts subject to famine and the sources of food-supply; and that this freedom of communication will best be attained by adhering to the present arrangement under which the construction and working of these Cuddayah-Nellore Railway extensions are to be entrusted to the South Indian, and not to the Madras Railway Company.

2. We beg to express our concurrence generally in these views of the Madras Government; and consider that it would be unadvisable to entrust the working of these metre-gauge lines to a Company whose interests might lead them to endeavour to force traffic upon their own broad-gauge line. We further consider that it would, in any case, be too late to reopen the question as to the agency by which these extensions should be constructed and worked, now that the necessary legislation has been effected for investing the South Indian Railway Company with the necessary powers in this respect.

3. At the same time we confess that it is against our general principles of railway management to introduce rival interests into an area of country, the traffic of which is already in the possession of another Company; and we cannot fail to recognise the force of the arguments of the Madras Chamber of Commerce, that the introduction of the South Indian Railway into districts which have hitherto been served by the Madras Railway may lead to competition and may tend to divert, to Pondicherry and to Negapatam, traffic which properly belongs to the port of Madras.

4. This diversion of traffic would probably be effected by preferential rates; and as it is in every way undesirable to encourage any such competition between the rival Companies, we beg that Your Lordship will bear in mind this point in any agreement that may be drawn up for the working of these extensions, and will cause the insertion of a stringent clause which will place it beyond the power of the working Company to levy preferential rates.

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No. 92 (Railway), dated 17th August 1888.

From—The Government of India,

To—The Secretary of State for India.

We have the honour to acknowledge the receipt of Your Lordship's Railway Despatch No. 60, dated 7th June 1888, forwarding for our information a copy of

the South Indian Additional Powers Act,\* 1888, and asking for our views as to what measures should be taken

for carrying out such portions of the extensions for which these powers have been taken, as it may be considered desirable to undertake.

2. With Your Lordship's Railway Despatch No. 119, dated 10th November 1887, was forwarded copy of correspondence with the Board from which it appeared that at a general meeting of the Company the proposal was approved that the extensions of the Cuddayah-Nellore line from Tirupati to Dharmavaram and from Pakal Junction to Villupuram should be constructed and worked by the Company under such arrangements as might be agreed upon between the Secretary of State and the Board. In this correspondence it was further stated that the Agent of the Company had been instructed to place himself in communication with our Government, in view to the adoption of such preliminary measures as might be practicable.

3. On receipt of this despatch we entered into communication with the Government of Madras, with the result that the complete surveys, estimates, and records of the lines above named were placed at the disposal of the Agent; and officers, partly Government servants and partly officers of the Railway, were appointed to mark out the lines, to make arrangements to facilitate the ultimate transfer of the land, and to prepare indents for materials, some of which have since been

\* 51 and 52 Vict., session 1888.

transmitted by the Agent to England, so as to be in readiness to invite tenders for their supply as soon as definite arrangements had been concluded for the actual construction of the lines.

*Telegram to Secretary of State, dated 15th August 1888.*

Your Railway Despatch No. 60, 7th June last. Dharmavaram-Tirupati Railway. Pakal-Villupuram Railway. We strongly urge that construction of these lines be undertaken, but we cannot provide for it by funds raised by ourselves. Will you raise funds or allow South Indian Railway to raise them to admit of work being commenced next year on terms of contract being settled?

4. With regard to the measures to be adopted in future, we have despatched a telegram, repeated in the margin, and now desire to record our views in greater detail.

5. We are strongly in favour of the early construction of these lines, not only for the sake of the development of the country through which they run, and for the economy in working which will be caused by enlarging the South Indian Railway system, but mainly on the ground of the protection they will afford from famine. These grounds have been dwelt upon at length in previous despatches, and the arguments therein advanced are strengthened by the deficient rainfall of this year, which shows the risk of failure to which the crops in this part of the country are continually subject. Up to the present time the rainfall in the Bellary and Cuddapah districts has been less than half of what is usually received in the south-west monsoon.

Station.	RAINFALL.	
	Since 1st June 1888.	Average from 1st June to date.
Kurnool . .	4.77	13.65
Bellary . .	1.57	4.70
Cuddapah . .	5.21	11.40*

\* Average to end of August.

We give in the margin the rainfall, as reported by the Meteorological Department, up to the 15th of August in the principal stations in the neighbourhood of the projected lines; and would point out that it is on the south-west monsoon, and not on the north-east monsoon, that these tracts are mainly dependent for their rainfall.

6. We understand that Your Lordship is committed to the acceptance of the scheme, and also to the construction of the lines by the South Indian Railway Company, and that the only question remaining for determination, in addition to that of the supply of funds on which we have given our opinion by telegram, is the time at which financial considerations will allow of their being commenced—a point on which we are anxious to learn Your Lordship's decision as speedily as possible.

7. We trust that it may be found practicable to raise the funds required early next year, either directly or through the agency of the Company. In urging this we do not overlook Your Lordship's desire that capital expenditure on Railways shall be reduced as much as possible, and that no new railways shall be commenced; but we conceive that the negotiations regarding these lines have gone so far that they may be treated as already "under construction."

8. With regard to the terms to be agreed to with the Company, we recommend they should be both for construction of these new lines, and also for working the whole system after the present contract expires in 1890.

As to the details of those terms we do not offer any present opinion, but shall be prepared to do so if desired. Meanwhile we may remark that the Company should be required to employ such of our surplus Engineers as, being thoroughly capable officers, we are ready to transfer to them, in preference to engaging any new staff in the service of the Company.

9. Should Your Lordship agree that the capital be raised early next year, and consider that the terms of the agreement will not take long to arrange, we propose, pending the result of these negotiations, to commence the construction of the lines by the State, employing our own officers under the general superintendence of the

Agent and Chief Engineer of the Company, advancing the necessary capital (which is not likely to exceed 10 lakhs of rupees during the current financial year), to be repaid ultimately out of the Loan Capital, should this capital be raised by the Company. A condition with regard to this repayment should be entered in the agreement.

10. We request the favour of being informed of Your Lordship's decision on the question by telegram.

No. 104 (Railway), dated 30th August 1888.

From—The Secretary of State for India,

To—The Government of India.

Your Excellency's Railway letter No. 77, dated 13th July 1888, stating your views in respect to the agency by which certain famine protective lines in the Madras Presidency should be constructed and worked, has received my consideration in Council.

Construction and working of famine protective lines by the South Indian Railway Company.

2. I am glad to learn from this letter that Your Excellency's Government concurs with me in preferring the agency of the South Indian Railway Company for this extension of the narrow-gauge system in Madras, and any possible diversion of traffic from the system of the Madras Railway Company by preferential rates will be guarded against by insertion of the necessary clause in the contract to be entered into with the South Indian Railway Company, as has already been intimated to the Government of Madras in my Railway Despatch to that Government, No. 3, dated 12th July 1888.

No. 98 (Railway), dated 24th August 1888.

From—The Government of India,

To—The Secretary of State for India.

In a recent despatch\* we recommended to Your Lordship the early construction of the railways from Pakal to Villupuram and from Tirupati to Dharmavaram. The first of these extensions is connected with the South Indian Railway, but the other has its western terminus at Dharmavaram, which is unconnected with any other railway system, and we consider that in the event of these Cuddapah-Nellore extensions being undertaken, it would be advisable simultaneously to arrange for the line from Dharmavaram to Guntakal.

\* No. 92 (Railway), dated 17th August 1888.

2. The position of the projected line from Guntakal to Hindupur is almost the same as that of the lines from Dharmavaram to Villupuram: that is to say, we understand from the correspondence forwarded with Your Lordship's Railway Despatches No. 97, dated 8th September 1887, and No. 2, dated 5th January 1888, that Your Lordship has agreed to the principle of the construction of that line by the Southern Mahratta Company, leaving to further consideration the question when it should be begun. We do not consider that the whole length to Hindupur need be carried on at present, and still less its extension to Tumkur or Bangalore, though that must ultimately follow, but it is obviously necessary that that part of the line which lies between Guntakal and Dharmavaram should be completed as soon as the South Indian extensions are, in order that the Kistna delta may be brought into communication with the Madras districts through which the Dharmavaram-Villupuram line is to run.

3. We have already brought to Your Lordship's notice in our Railway Despatch of last week the scanty rainfall which has fallen about Cuddapah, Bellary,

and Kurnool during this monsoon, and the accompanying report by Mr. Nicholson\* on the economic condition of the Anantapur district, which will be protected by this Guntakal-Dharmavaram connection, will show how unfortunately situated this part of the country is as regards both monsoons, and how precarious is the nature of the cultivation.

4. We may add that the earth-work for a railway line on the metre gauge has already been partly completed as a famine-relief work. The estimate for the whole line, submitted with our Railway Despatch No. 24, dated 1st February 1887, amounted to 75½ lakhs of rupees, of which 3½ had already been spent on the earth-work: the section from Guntakal to Dharmavaram is about half the distance to Hindupur, and the capital required may therefore be approximately taken at about 35 lakhs of rupees.

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No. 124 (Railway), dated 22nd October 1888.

From—The Government of India,

To—The Secretary of State for India.

In Railway Despatch No. 60, dated 7th June 1888, Your Lordship drew our attention to a communication\* in which the Board of Directors of the Madras Railway Company express their views in respect to the agency of that Company being employed in railway extension in Southern India.

\* From the Board of Directors of the Madras Railway Company to Agent, No. 794, dated 20th April 1888.

2. We have received separately from the Government of Madras a copy of this communication, and also of a letter from the Agent of the Madras Railway Company, formulating the projects which he proposes should be constructed on the 5' 6" gauge by his Company, and which comprise extensions—

- (I) From Guntakal to Bangalore.
- (II) From Salem to Dindigul.
- (III) From Palghat to Dindigul.
- (IV) From Calicut to Tellicherry or Cannanore.
- (V) A branch to Cochin.

3. Before sanctioning any expenditure in connection with these projects, we have desired the Government of Madras to ascertain the terms upon which the Madras Railway Company would be prepared to construct any of them, and to warn the promoters that no proposal to raise the Capital on the original conditions of a 5 per cent. guarantee can be entertained.

We remarked at the same time that we fully agreed with the Government of Madras in their view that the Guntakal-Hindupur Railway, with a possible extension to Tumkur or Bangalore, should be constructed on the metre and not on the 5' 6" gauge, because for famine purposes it was essential that there should be metre-gauge communication between Guntakal and Dharmavaram, and because the prolongation of the metre gauge beyond Dharmavaram would facilitate the supply of grain to Anantapur, and eventually either to Tumkur or to Bangalore.

4. In a recent despatch† we have pressed upon Your Lordship the advantages of arranging for the construction of the Guntakal-Dharmavaram line at the same time as the Cuddapah-Nellore extensions upon which work is about to commence.

† No. 96 (Railway), dated 24th August 1888.

5. We have above expressed our opinion that the metre gauge is the best suited for famine requirements, and can only regard as an error the interposition of a broad gauge between two metre-gauge systems, and as an unjustifiable superfluity the addition of a third rail on this project.

6. We hope, therefore, that no discussion as to the question of gauge will be permitted to delay the early conclusion of arrangements with the Southern Mahratta Railway Company for connecting Dharmaveram with Guntakal on the metre gauge.

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No. 123 (Railway), dated 31st October 1888.

From—The Secretary of State for India,

To—The Government of India.

I have to acknowledge the receipt of Your Excellency's Railway letters Nos. 92 and 98, dated the 17th and 24th August last, respectively, regarding the early commencement of the Tirupati-Dharmaveram and Pakal-Villapuram Railways, as well as the section from Guntakul to Dharmaveram.

2. Concurring with your Government in the opinion that the early construction of the former of these lines is called for on the ground of the protection they will afford against famine, I despatched to you, on the 19th September, the telegram noted in the margin.

*Telegram from Secretary of State to Vice-  
President of the South Indian Railway, 1888.*

"Yours, 15th August, and Railway letter No 92. Commencement of proposed lines approved. I am in communication with South Indian Railway on the subject."

3. With reference to the latter part of the telegram, I forward copy of the communication \* which I caused to be addressed to the South Indian Railway Company. The indents sanctioned by your Government, which have already been received by the Directors, will now be complied with, and the funds to meet the necessary expenditure in this country during the present official year will be advanced to the Company. The same course will be followed by your Government as regards expenditure in India.

4. I have not yet determined how the money for these lines shall be eventually obtained, that is to say, whether it shall be advanced under the powers given in Clause 12 of the South Indian Railway (Additional Powers) Act of last session, or whether it shall be raised by the Company. Any contract, therefore, relating to the raising of capital will have to be postponed, but the Directors will be made to understand that, whatever amount is advanced to them under the present arrangement, will have to be repaid out of any capital which they may be called upon to raise.

5. With regard to the contract which will ultimately have to be made with the Company for working the lines, when completed, as part of the system of the South Indian Railway, I am disposed to think that the settlement of the terms and conditions should be deferred until a nearer approach of the time for the termination of the Company's present contract. It would be, in my opinion, inexpedient to interfere with the expiry of that contract and premature to discuss the terms of a future one. The earliest time at which the purchase of the existing South Indian Railway can be effected is the 30th June 1891, notice being given between 1st March and 1st September 1890. In the meantime the work of construction will be going on. The effects of the contracts recently made with the Southern Mahratta and other Railway Companies can also be watched, and I shall be glad to receive from your Government any suggestions as to details that may occur to you.

6. With regard to the projected section from Guntakul to Hindupur, while sympathising with Your Excellency in the desire to complete a line which will, no doubt, supply a valuable communication in the event of the districts through

which it passes suffering from scarcity, I feel the inconvenience of commencing works the cost of which has not been provided for within the present official year. Unless, therefore, you have good reason for apprehending any pressing necessity for precautionary measures, I would prefer limiting present operations to the lines before mentioned, and to postpone any communication with the Southern Mahratta Railway Company on the subject of this section until next year's Budget has been considered.

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No. 1662 P.W., dated 20th September 1888.

From—HORACE WALPOLE, Esq., Under Secy. of State for India,

To—H. W. NOTMAN, Esq., South Indian Railway.

With reference to previous correspondence on the subject of the construction by the agency of the South Indian Railway Company of certain famine protective lines in the Madras Presidency, I am now directed to inform you that the Governments of India and Madras have intimated their desire that arrangements should be made with the South Indian Railway Company, so as to admit of the commencement of a line from Villapuram to Pakul and Tirupati, and from Pakul to Dharmavaram.

I am to add that the Secretary of State is prepared, for the present, to advance the necessary funds for the purpose of commencing operations forthwith. There are also available in India engineers in the Public Works Department who could be lent to the Company by the Government.

The Secretary of State would accordingly be glad if the Directors would give the necessary instructions to their Agent to place himself in communication with the Government of Madras, in order that measures may be taken for proceeding with the construction during the ensuing cold season; and he trusts that they will see fit to allow the Agent to select such officers as may be required, in addition to their present staff, from those whom the Government may recommend.

I am desired to add that Lord Cross will shortly be prepared to consider with the Directors how the capital required for these lines shall be raised, and what general arrangements, pending the termination of the first term of the contract with the Company, would best suit the circumstances of the case.

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## 5.—Assam-Bihar Railway.

*Extract, paragraph 3, from Despatch No. 72 B., dated 26th May 1853, from the Government of India to the Secretary of State for India.*

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After full deliberation we are strongly impressed with the importance of completing this project, unconnected portions of which already exist; the communications will be most valuable as affording to the redundant population of Tirhoot a ready means of transport to the Province of Assam, where the demand for labour is ever increasing, as well as in opening out some of the richest tracts of Upper Bengal; as a famine-protection work, too, its benefits in time of drought would be incalculable. The Famine Commission of 1880 in their report state: "The parts in which the effect of drought have been most serious are—(1) a tract extending along the borders of Nepal, from the Gunduk to the Kosi river, 250 miles by 50." Again: "In Northern Bengal the districts of Behar and Bhagalpur, north of the Ganges, also require the extension of the lines already constructed."

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No. 111 (Railway), dated 8th October 1885.

From—The Secretary of State for India,

To—The Government of India.

Your Excellency's Railway letters Nos. 96 and 97, dated 17th July 1885, furnish the latest estimates of the total cost of the Assam-Bihar Railway, which it has been proposed should be handed over to the Bengal and North-Western Railway Company, together with an expression of your views as to the best mode of effecting the transfer of this system to that Company.

2. I would point out to Your Excellency's Government that the proposal made by you—namely, that the Company should raise the required capital by means of debenture stock guaranteed by Government—is, as I am advised, one that cannot be entertained, inasmuch as the Company is only empowered by its Memorandum of Association to raise money for the purposes of its own undertakings, and the payment to Government of the cost of the Assam-Bihar lines is not one of those purposes. This legal difficulty might, however, if it were deemed advisable, be possibly overcome by the reconstruction of the Company, or by the formation of an affiliated Company; but this question need not be seriously considered until the Company find themselves able to make proposals which are likely in any degree to prove acceptable to Government.

3. In the present state of the money market in regard to Indian railway enterprise, as evidenced by the recent inability of the Indian Midland Company to obtain more than two thirds of their capital, the possibility of the Bengal and North-Western Railway Company offering to undertake the Assam-Bihar Railway on terms which would be acceptable appears so remote that it would not, in my opinion, be expedient for Your Excellency's Government to anticipate a favourable issue to the negotiation. And, for reasons which will be found in a subsequent paragraph, I have thought it expedient to defer for the present any further communication to the Company.

4. With respect to the engineering features of the scheme, I would observe that the arguments urged by the Government of Bengal in their letter to you No. 1317 T. R., dated 6th October 1884, in favour of Bugwah as against Dhubri as the terminus of the line, especially when regard is had to the very great difference in cost of the two alternatives, appear to me to be of no small weight. With



reference to this and to our general financial position, I am disposed to think that this part of the project might well be deferred for reconsideration, and that the construction of the railway should not in the meantime be extended east of the Teesta. For the present, therefore, and until I receive your further views, I will defer communicating with the Bengal and North-Western Railway Company.

5. The action of Mr. H. Bell, the Engineer-in-Chief, in so largely and unnecessarily modifying the sanctioned design and increasing the cost of the Gunduk Bridge, and the apparent insufficiency of the system of general supervision under the operation of which such serious laxity could occur, have been noticed in your letter to the Bengal Government, No. 647 R. C. of the 14th July. But, judging from the correspondence before me, it appears to me that the waste of money which Mr. Bell has caused by needless and costly alterations of design would have justified treatment of a much less lenient character.

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No. 8 (Railway), dated 5th January 1886.

From—The Government of India,

To—The Secretary of State for India.

We have the honour to acknowledge the receipt of Your Lordship's Railway Despatch No. 111 of the 8th October 1885, regarding the Assam-Bihar Railway.

2. Since the despatch in question was written, the success of the Indian Midland Railway Company in raising the remainder of their capital would seem to indicate that the money market is now in a more favourable condition. Your Lordship may, therefore, now be prepared, in view of the important financial advantages of such transfer, no less than the administrative and political necessity for the early completion of the projected military and protective railways, fully explained in our Despatch No. 264 of the 22nd September 1885, to open negotiations on an early date with the Bengal and North-Western Railway Company for the transfer to that Company of the Assam-Bihar Railway generally on the terms previously proposed by us. Whether the end can be gained by a reconstruction of the Company or by the creation of an affiliated Company, as suggested by Your Lordship, will be matter to be determined by the Bengal and North-Western Railway Company; but it seems to us that the project will have more chance of early development if it is undertaken by a Company such as the Bengal and North-Western Railway, owing to its having a strong local interest, and to the fact that it has already commenced so well with its own venture.

3. As to the merits of the Bugwah route over that *vid* Dhubri, we are taking steps to have the matter thoroughly investigated during the present working season; but whether Bugwah or Dhubri should be the terminus of the present railway extension towards Assam is really a matter of detail, and need not interfere with the negotiations which we trust Your Lordship may be able to carry to a successful issue with the Bengal and North-Western Railway Company. This section might, if Your Lordship thought necessary, be placed on a discretionary basis similar to that provided for the Saugor-Kutni branch in paragraph 57 of the contract for the Indian Midland Railway.

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No. 1 (Railway), dated 7th January 1886.

From—The Secretary of State for India,

To—The Government of India.

In continuation of my Railway Despatch No. 88 of 16th July last, I forward herewith copy of a letter\* from the Bengal and North-Western Railway Company, in which the Directors express their conviction that the guarantee of the

\* Dated 11th December 1885.

Secretary of State is absolutely necessary for the success of any proposal to raise the necessary funds for taking over, completing, and working the system of railways between the Company's line and the Brahmaputra. The Board would, however, undertake the working of the portion of the Tirhoot Railway system west of the Kosi river, "on the terms on which the Tarkessur Railway is worked by the East Indian Railway, the Company purchasing the rolling-stock and flotilla now belonging to the Tirhoot Railway.

2. This proposal would give to the Company one fifth part of the net receipts as remuneration for working the line, the working expenses being calculated at the same percentage of the gross receipts as the total working expenses of the combined railways bore to the total revenue from them.

3. I have informed the Company that I will communicate further with them on receiving an expression of Your Excellency's views on the subject.

No. 422, dated the 11th December 1885.

From—E. L. MARRYAT, Esq., Secretary, Bengal and N. W. Ry. Co., Ltd.,  
To—The Under-Secretary of State for India.

With reference to India Office P.W. No. 1115 of 15th July 1885, I am directed to inform you that the Board, having carefully considered the question of taking over, completing, and working the system of railways between the Company's line and the Brahmaputra (excluding the Bengal Northern), have, on the information before them, come to the conclusion that the difficulties and expense attendant on the crossing of the Kosi river, and of the extension over the Teesta and other rivers to Dhubri on the Brahmaputra, render it hopeless to put before the public, with any chance of success, any proposal for raising the necessary funds without a guarantee from the Secretary of State.

The Board would, however, be glad to take over the working of the portion of the Tirhoot railway system west of the Kosi river, now close on completion, on the terms on which the Tarkessur Railway is worked by the East Indian Railway, the Company purchasing the rolling-stock and flotilla now belonging to the Tirhoot Railway. It is manifest that one system of 650 miles can be worked more efficiently and economically than two short systems, and it is believed that, by concentrating the working under one management, fuller benefit will be derived from the Gunduk Bridge now under construction, and the considerable traffic which it is understood already exists between the North-West Provinces and Tirhoot will be rapidly developed, and also that the arrangement generally will be conducive both to economy and to the public convenience.

Any arrangement, moreover, for working the Tirhoot system need in no way interfere with any proposals which may hereafter be put forward by the Secretary of State or the Company for taking over, working, and completing the system to the Brahmaputra, whenever a satisfactory solution is arrived at of the difficult problems connected therewith, and the subject is ripe for further negotiation.

No. 29 (Railway), dated 2nd February 1886.

From—The Government of India,  
To—The Secretary of State for India.

We have had the honour to receive Your Lordship's Despatch No. 1 (Railway), dated 7th ultimo, intimating that the Bengal and North-Western Company consider that a Government guarantee is indispensable for the raising of funds for taking over, completing, and working the Assam-Bihar Railway, but would be willing to work the portion of that railway west of the Kosi for one fifth part of the net receipts as remuneration, and inviting our opinion on the Company's proposal.

2. We can readily understand that the Company find a Government guarantee necessary to the raising of capital for the Assam-Bihar undertaking, and we observe that their present letter is written in reply to a communication of a merely general nature from Lord Harris, dated some six months ago, and in apparent ignorance of the scheme proposed in our Despatch No. 97, dated the 17th July last.

3. In putting that scheme forward we considered that the financial relief to be derived from raising some 400 lakhs of rupees through the medium of a Company instead of by State loans, coupled with the administrative and political advantages of assuring the early completion of our military and protective railways, compensated for the surrender to a private company of a share of profits which would otherwise unobjectionably accrue to the State.

4. The Company's present proposal, however, involves the surrender of a share in profits without any of the compensating advantages above enumerated. More than this, it would concede to the Company the profits of the most complete and best-developed portions of the Assam-Bihar Railway, leaving the remaining and, for a time, the least remunerative ones to be completed and worked by the State—an arrangement to which the Bengal Government would naturally object, and for which we should be obliged to make considerable compensatory allowance to them in the coming revision of their Provincial contract. Finally, the partition would preclude that continuity of management between the North-Western Provinces and the Brahmaputra which we look upon as very material to the due development of the coolie traffic with Assam.

5. On the above grounds we beg to recommend that the Company's proposal be declined and that negotiations be proceeded with, as suggested in our Despatch No. 8 (Railway), dated the 5th ultimo, on the basis of the proposal in paragraph 11 of our Despatch No. 97, already alluded to, or such modification of it as Your Lordship may consider expedient.

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No. 46 (Railway), dated 16th March 1886.

From—The Government of India,

To—The Secretary of State for India.

With reference to paragraph 3 of our Despatch No. 8 (Railway), dated 5th January last, we now beg to forward copy of a report by Mr. Mallet, whom we deputed to investigate the relative merits of Dhubri and Bhugwa as a terminus for the Assam-Bihar Railway. This report appears to prove conclusively the impossibility of establishing a terminus at Bhugwa or any place in its vicinity. The principal bridge over the Teesta being indispensable in either case, the saving anticipated from avoiding the three other rivers would be a very insufficient compensation for the inconvenience to the public, and the constant expense of temporary and ever-varying arrangements for carrying passengers to the steamer, as well as the additional river journey, which the adoption of the Bhugwa scheme would entail. Dhubri, on the other hand, is a permanent locality, founded on rock, and the worst that it is subject to is the occasional recession of the main stream for a certain distance. We consequently see no reason to modify the conclusion in favour of Dhubri, contained in paragraphs 10 to 12 of our Despatch No. 96 (Railway), of 17th July 1885.

2. We also submit copy of a report by Mr. Mallet upon the crossing of the Kosi river, which we have taken advantage of the occasion to obtain in view of the remarks on the difficulties and expense attendant on it contained in the letter No. 422, dated 11th December 1885, from the Board of the Bengal and North-Western Railway Company, which was an enclosure to Your Lordship's Despatch

No. 1 (Railway), dated the 7th January last. It will be observed that while Mr. Mallet recommends further investigation of details, he considers that the railway may be carried forward on both sides so as to leave a gap of only  $3\frac{1}{2}$  miles intervening, and that, for crossing this, temporary arrangements will be practicable somewhat analogous to those which have been successfully adopted for crossing the Sutlej at Ferozepore.

More than this we have never contemplated. Considering that a bridge would be far too difficult and costly a work under the circumstances, we provided, in paragraph 12 of our Despatch No. 72 (Railway), dated 26th May 1883, for an interval of about 4 miles with temporary arrangements for crossing, as recommended by the Local Government in their communications accompanying that despatch.

3. In conclusion, we append a memorandum upon the two points now in question with which we have been favoured by Mr. C. A. Elliott, Chief Commissioner in Assam, now in Calcutta on special duty.

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No. 46, dated 16th February 1886.

From—R. T. MALLET, Esq., Chief Engineer, on Special Duty,  
To—The Director General of Railways.

In compliance with the orders contained in your letter No. 0247 E., dated 6th January last, to the Manager of the North-Western Railway, I have the honour to report my return from Bhugwah after investigating the question whether it is feasible to extend the Northern Bengal Railway to a point on the right bank of the Brahmaputra at or near Bhugwah, to which the large steamers trading with Assam could find access throughout the year.

2. I find that it is quite impracticable to do this. A branch railway could be easily and cheaply made anywhere between the Teesta and the Dharla rivers as far as the extreme right bank of the Brahmaputra basin, but it would be impossible to carry it over the remaining distance of 3 to 6 miles up to the navigable channel or true Brahmaputra.

3. I found by actual measurement that the extreme right bank at Niabat, some 5 miles below Bhugwah, remains exactly where it is shown on the Government published maps as surveyed in 1876-77, while soon after that date the river cut back at Bhugwah about three quarters of a mile to the west of the line shown on the map.

4. All that now remains of the river under this bank is a chain of stagnant pools, the water in which stands  $26\frac{1}{2}$  feet below the level of the cultivated plain to the west. For more than half the year no boats or steamers can approach, and the large steamers which trade with Assam either could not reach this right bank at all, or at most could only work their way in cautiously during the short fraction of the year when the river is very high.

5. The tract of country between this old abandoned right bank and the present cold weather navigable channel consist of banks of loose sand of from 6 to 26 feet above low-water level. These during the four or five months of flood are covered with running water varying in depth from 26 feet downwards. Even were it possible to work a temporary line from Bhugwah over this tract, it would have to cross the River Dharla, the principal mouth of which joins the Brahmaputra some 5 miles lower down. The Dharla has never been navigable by large steamers.

6. The inhabitants regard the old channel on the right bank as "murra," or dead, a term applied throughout Bengal to a permanently-deserted river channel.

7. It is 18 or 20 years since Bhugwah was a regular place of call for the Assam steamers; there is no prospect of its again becoming one within any assignable number of years.

8. I attach two maps;\* the larger one especially conveys some idea of the immense tract of loose dry sand for more than half the

\* To be returned. year and of deep running water for the remainder, which constitutes the bed of the Brahmaputra. I also attach a diagram showing the daily height of the river at Gauhati during 1885. For the present purpose this may be taken as representing the usual annual rise and fall at Bhugwah.

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No. 0308 C., dated 8th March 1886.

From—R. T. MALLEY, Esq., Chief Engineer, on Special Duty,  
To—The Director General of Railways.

With reference to the orders of the Government of India, contained in letter No. 1007 R. E., dated 31st December 1885, I have the honour to report on the proposed crossing over the Kosi at Nathpur for the Behar-Assam State Railway.

2. There is no reason to reopen the question of the place to cross. It would be necessary to go 45 miles up stream into Nepal to find a rock-crossing, and although the slope and velocity are less further south, the magnitude of the training works would certainly not be less.

3. The fall of the river at Nathpur is very steep. It is reported by Mr. Kulan, Executive Engineer, at 20 feet in 8 miles between Bulooa and Pertabganj, and this agrees with the slope of Mr. Walker's section of 1 in 2000 for 4 or 5 miles south of Mutiari Station, where the line runs parallel to the river, and is further confirmed by the levels of the Trigonometrical Survey. This slope, no doubt, increases to the north, and decreases to the south in a curve.

4. The section along the railway from Jamuria Station shows a very uniform slope for 40 miles to the west of the river of 1.35 feet a mile.

5. At the 90th mile from Samatipur the line crosses the Bir Bund, an ancient embankment running due north up to the hills. The location of this bund, nearly at the top of the slope just referred to, suggests that it was constructed to restrain the Kosi from working westwards, while, on the other hand, the existence of several cross-spurs growing out of it at right angles on the west side suggest the idea that it was intended to prevent an ancient river-channel, still clearly to be seen between the 88th and 90th miles, from working eastwards.

6. The Kosi is a very large river, but there are at present no means of estimating its magnitude. Its catchment area lies almost wholly in Nepal, and the only two maps in existence are to a great extent guess-work. They are not published, but I was enabled to trace the catchment area from them at the office of the Surveyor General, and found it 19,100 square miles and 20,224 square miles respectively. But there is absolutely nothing known of the rainfall on this area.

7. I think the Kosi is larger than the Sutlej, and since it runs on high ground of its own making and has a steeper fall and higher velocity, with the same fine sandy bed, it is a more difficult river to deal with.

8. There is abundant evidence that the river has been working steadily westward for a long period. It ran to the east of Purnea station within comparatively recent times, and has shifted 4 miles to the west since the Revenue Survey Map was made in 1846 to 1850. At the railway-crossing at Nathpore the left bank has locally cut back 50,000 feet eastward since Mr. Walker made his section.

9. Nevertheless, I see no reason to conclude that the river cannot be trained and forced to go through a permanent bridge. But the cost of construction and of maintenance of the training works would be very heavy, not less probably than that of the similar works at Ferozepore, and the lines of approach for the Kosi which would have to be defended from its action, would perhaps have to be 9 miles long on each side.

10. I could not undertake to propose any definite scheme for the training works or for the bridge without a detailed survey of the river for at least 1 mile below the railway and 12 miles above, or as much higher as to include the whole of the minor channels crossing the railway up to their sources from the main-channel, and extending from the Bir Bund for 12 miles eastward; together with cross-sections taken parallel with the railway at intervals of 2 miles over this area. That amounts to at least 150 square miles of survey and 150 lineal miles of section.

11. The survey should show the actual state of the river in the cold season without any attempt at showing the magnitude of the floods, which should be exhibited on the sections only. It should show on a scale of 4 inches to a mile—

- (a) The area of water actually surveyed, in blue colour.
- (b) Recent sandy bottoms and deposits free of grass, yellow ochre.
- (c) Grass jungle or grazing land, pale green.
- (d) Spots furnished with trees of 20 years' growth or older, dark-green or any conventional method. No trees to be marked at random where none exist.
- (e) Steep cutting banks by a thick dark line. The opposite shelving bank by the above distinctions of colour only without any line.

12. The use of the plan and sections would be to measure on them the size of the river, the length necessary for the bridge, the proper position for the bridge, and the alignment of the training works. It could then also be seen how to deal with the various bye-channels, some of which run throughout the year and others only during the rains. All of these should be permanently closed at their sources if possible.

13. The sections would show actual ground-levels and highest-flood levels carefully collated from numerous enquiries or the local inhabitants. All information so obtained should be recorded and reported, together with observations as to the value to be assigned and inferences to be drawn from it in each instance. Where the surface slopes are so great as in this case, both along and across the river, it is necessary to ascertain flood-levels at frequent intervals and not merely to infer them from others at great distances. The place is inhabited by very intelligent people from whom very reliable information can be obtained.

14. Flood-gauges should also be established, with two subordinates to look after them. It would be impossible to make daily readings at numerous points, but one gauge on each side of the main stream might be read daily, and others at one per mile on each line of section might record automatically the highest flood of the season. They would consist of a wooden post protected from cattle, and having a groove protected from rain by a cover screwed on, closed at the upper end and open below, with one or two small air-holes at the top. The whole would be well painted with oil-paint, and over this the groove would be painted with detached horizontal narrow bands of distemper, which would be dissolved off by the flood water, and, therefore, indicate on examination in November how high any flood had risen. The details described would guard against the water rising by capillary attraction and dissolving the distemper higher than the flood-level.

I understand that owing to want of establishment no flood-observations were made in 1885, as proposed in paragraph 7 of Government of India's letter No. 77 R.C., of 20th January 1885. The floods of 1885 are said to have been the highest remembered.

15. The bed of the Kosi is everywhere fine sand to an unknown depth. The highest floods cover the high banks close to the main channel at each side near Nathpore to about 3½ feet deep. The lowest cold-weather level is about 10 feet below this, or 6½ feet below the ground, and no open foundation work can be done below this level. The subsoil water in wells at a distance from the main channel stands rather lower, or about 10 feet below ground-level. Large quantities of drift

wood and trees are brought down and are seen embedded in the sands. The deepest water in the main channel in the cold weather is about 20 feet usually.

16. I have been favoured by Mr Bradford Leslie with the details of his design for a railway girder and pier made of worn rails to which my attention has been drawn. The girders are sufficiently stiff and strong, but I think they would require better lateral bracing than is shown on the drawing. I think the pier is unsuitable to the conditions described above, and that for a suitable pier the girder is of too small a span to be economical.

Spans of 60 feet on screw-piles would be best, but the details of the design for the bridge might be deferred for the present, for with a river habitually changing its course so greatly and rapidly, it would not be safe to commence the bridge until the training works had been so far advanced towards completion as to have brought the river under control and ensured its remaining in the place selected.

17. I do not think the idea of dispensing with training works and constructing a cheap bridge with the prospect of having occasionally to renew sections of it, or to add or subtract from its ends, to suit changes in the course of the river, can be seriously entertained. Whatever be the design of the bridge, no curtailment is possible of the length necessary to pass the greatest floods; and if the character of the design were so cheapened as to render any pier liable to be overturned, it is certain that great sections of the bridge would be swept away at immense loss. The cost of occasionally dismantling the bridge at one end to add the material to the other end would also be immense.

18. The details of the training works must also be deferred until the necessary plans and sections have been made. These might then be submitted to Colonel Brownlow for his opinion.

19. I was informed that stone can be quarried on the river banks about 45 miles above Nathpore. A specimen alleged to be this stone procured from a passing boatman proved to be schistose slaty quartz, well adapted for rubble-work, *pierre perdue*, but incapable of being dressed.

20. I made very numerous enquiries of the villagers and boatmen of the greatest flood-levels known to them between the Bir Bund and Nathpore Station or 11 miles across the river. The evidence obtained was remarkably concordant, and was to the effect that floods have never been seen more than knee-deep over the grazing lands between Partabganj and high unflooded lands of village Jevachpore on the right bank. This must be accepted, but it is difficult to reconcile it with the long stretches of water 6 and 8 feet deep shown on Mr. Walker's section, and yet it cannot be supposed that the ground-levels of the section are wrong. The fact probably is that with the very steep fall along the river the level of the water surface as seen in cross-section varies very much with the configuration of the ground and the proximity of the deep discharging channels. This makes it impossible to judge from Mr. Walker's section what the discharge over the grass land is.

21. But if it be anything like what is described by the villagers, *viz*, knee-deep, moving with a velocity too small to keep fine sand in suspension, then a line crossing it would be in a very similar and not a worse position than the heavily-flooded portions of the Indus Valley Railway north of Sukkur, where 800 feet of waterway a mile has proved sufficient to pass the great spills of the Indus.

22. Hence I think the permanent line of Railway might be taken on at once from Partabganj at 79 miles to mile 73½ on Mr. Walker's section, and on the east bank it might be taken on to mile 69½, or the present bank of the river. This would leave a gap of 3½ miles only to be crossed by temporary expedients. These 8 miles of line would have to be bridged pending the completion of the permanent training works. Some 3,000 feet of bridging would be needed, including the old or deserted main Kosi channel at 68½ miles. But on the completion of the permanent training works it would no doubt be advisable to close all the openings. The bridges might, therefore, be on screw-piles, to be afterwards utilised either in

the main bridge or on other railways, or they might be of timber if a sufficient quantity of long *sal* could be obtained. This is doubtful, as the Nepal Durbar strongly opposes the cutting of long timber.

23. Traffic over the gap of  $3\frac{1}{2}$  miles would be subject to great difficulties and interruptions during four months in the year. It could be best carried on for the eight drier months by a tramway of 2 feet gauge laid over floating bridges as at Ferozepur. But the difficulty of keeping such a line open will be vastly greater at the Kosi in consequence of there being usually two or three or more main channels separated by shallow water and quicksands. A great length of floating bridge would have to be provided. It might consist of the ordinary country boats of 300 maunds burden. These could be purchased or built for Rs60 each. They might be spaced 24 feet centre to centre and bridged with worn rails, fished with timber at the joints between the boats and carrying light tramway rails on timber cross-ties. The first cost of such a bridge would be about Rs25 a lineal foot, or one and a half lakhs for 6,000 lineal feet. The tramway might be carried over the three channels shown on the section at miles 72,  $72\frac{1}{2}$ , and 73 on temporary bridges with timber piers spanned with worn rails.

24. The floating bridge could not be upheld during the four months of floods, and ferry steamers would have to be provided; at least three would be necessary. They should be flat-bottomed and small, say, 100 feet long, drawing not more than 15 inches of water when fully loaded, with a stern paddle, high-pressure engines, and locomotive boilers like the steamers lately imported by the Sukkur municipality.

During the dry months, when the floating bridge would be in use, these steamers could be utilised in towing boats up stream to fetch stone for the training works.

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*Memorandum by C. A. ELLIOTT, Esq., C.S.I., on the Assam-Bihar Railway, dated 12th March 1886.*

I have been permitted to see the despatches which have passed between the Government of India and the Secretary of State on this subject, together with Mr. Mallet's reports on the Bugwah Terminus question and the bridging of the Kosi, and to draw up a note on the case as it now stands, from the point of view of the interests of the Province of Assam.

2. With regard to the selection of Bugwah as a terminus, Mr. Mallet's report appears to confirm all that I wrote about its unsuitability in my Secretary's letter of 3rd February 1885; and I trust that that suggestion may now be treated as impracticable. Whatever be the place where the railway journey of the emigrants ends and their steamer journey begins, it is essential that that place be one where permanent depôts can be erected, and the establishment needed for the magisterial supervision, the registration, and the medical inspection (and treatment in case of sickness) of the emigrants can be maintained. Dhubri is such a place and Bugwah is not. If Bugwah were selected, a great expense would be thrown on the tea industry in the constant re-erection of temporary depôts and store-houses and accommodation for the establishment, as well as in the entertainment of special officials for the work, instead of which, at Dhubri a certain portion of their time is given by officials who are appointed there for other purposes, and who only receive small allowances from the labour-fund. The further objection arising from the fact that Bugwah is outside the Assam jurisdiction need not be dwelt on by me again.

3. With regard to the completion of the Assam-Bihar line, I look on it as a project which will have a most important bearing on the future prosperity both of the overcrowded divisions of Benares and Bihar, and of the under-populated but fertile wastes of Assam. In my scheme for attracting emigrants, facility of access is on



of the first essentials, and the completion of this line will make the journey extremely simple. It is true that Mr. Mallet's report shows that the bridging of the Kosi can hardly be thought of; but it will be very easy to pass the emigrants over this break by temporary contrivances with little inconvenience and no chance of their losing their way or going wrong. What are the alternative routes? It has been suggested, I am told, that they might come down the river by boat as far as Manihari, but it is this boat-journey which I am, above all things, anxious to see stopped, as being the prolific source of disease. Boats do now come down from Ghazipur to Goalundo and go on to Sylhet and Cachar, and I reported to the Government of India, in 1884, the terrible mortality on this route. By the law (Act I of 1882) a boat carrying more than 20 emigrants must be licensed, but there is no authority whose business it is to see that these provisions are obeyed on the Upper Ganges; and the emigrants are huddled together in a narrow space, fed on bad food and abominable water, and altogether in the hands of the boatmen as to where they are landed or at what rate they are carried. Another suggestion is that they might come down by the East Indian Railway to the station opposite Manihari, cross the Ganges there, and go on by the eastern part of the Assam-Bihar line. But it is just such changes and turns-out as this that I so strongly desire to avoid. If emigrants were always to travel as now in parties under the care of a garden sardar or a contractor's peon, who knows all about the route, this line is unobjectionable; but if we are to have any really free emigration we must not be satisfied with a route on which the emigrant, unless he is more alert and better informed than such men usually are, might first be carried on to Calcutta by the Chord line from Mokameh, or if he succeeded in getting on to the Loop line, might be carried past the station where he ought to get out for Manihari. What I want to see is a system under which an emigrant from the Benares or Behar districts may be able to get a through ticket to Dibrugarh, and may travel direct from his home to Assam without a possibility of missing the way, by through carriages which will set him down every 12 hours at a rest-house to feed and repose, and take him up again 12 hours later to perform the next section of the journey, and so on till he reaches Dhubri and comes under the care of the Government Agency at that place.

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No. 19 (Railway), dated 4th March 1886.

From—The Secretary of State for India,

To—The Government of India.

I have to acknowledge receipt of Your Excellency's letters Nos. 8 and 29 (Railway), dated respectively 5th January and 2nd February last, regarding the proposed transfer of the Assam-Bihar Railway to the Bengal and North-Western Railway Company.

2. Referring to the success of the Indian Midland Railway Company in raising the whole of their capital, your Government concludes that if negotiations were at once opened with the Bengal and North-Western Railway Company for the transfer to them of the railways in question, arrangements could be made for doing so on the terms proposed in your letter of the 17th July 1885,—*viz.*, that the Company should pay down the cost of the existing railway, and undertake to raise the remaining capital for the completion of the system, these amounts being obtained by debentures guaranteed 3½ per cent. interest, with one fourth of any net earnings in excess of 3½ per cent.

3. Having considered these proposals in Council, I have come to the conclusion that if at the present time an attempt were made to obtain the capital for those railways on the terms mentioned, it very probably might not succeed, and having regard to the obligations already incurred by the Government of India, and to those

which cannot be avoided in the immediate future, it would, in my opinion, be inexpedient at the present moment to go beyond those terms in order to secure the acceptance of the arrangements you propose by the Bengal and North-Western Railway Company.

4. There appears also to be another objection of an administrative kind to which I request your particular attention. I infer from your letter under reply that it is thought desirable to constitute into one system the various lines of railway either completed or being made by the Bengal and North-Western Railway Company and by the State, and to place it under one management.

5. It seems to me that before a scheme of this kind can be taken into consideration, very clear evidence should be given of its advantages. A single management is no doubt very important when applied to a main line of communication, such as that of the East Indian Railway from Calcutta to Delhi or the North-Western Railway from Lahore to Karachi, by which trade seeks an outlet at the nearest available port, but the Behar-Assam lines are in a very different position.

6. The trade of the districts through which they pass would appear likely to seek its markets in the great centres along the Ganges and ultimately in the port of Calcutta, and there seems to be little to lead to the development of any considerable through traffic along the tortuous line which would be formed by the connection of the railways traversing Northern Bengal from west to east.

7. The questions to be considered in determining the system of future management of these railways would, moreover, appear mainly to concern the interests of the Province of Bengal, and I should be glad, therefore, before anything is settled with regard to the eventual transfer of any of the existing lines of railway to other agency, if Your Excellency would consult the Government of Bengal on the whole subject. Their attention should be directed to the best plan of completing and working the system, and they might, at the same time, usefully consider what general scheme of administration may most advantageously be adopted for all the railways now under their management.

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*Memorandum by C. A. ELLIOTT, Esq., C.S.I., Chief Commissioner of Assam, on Special Duty, dated 30th July 1886.*

The Secretary of State's Despatch (4th March 1886) consider that there will not be much advantage in placing the Bengal and North-Western Railway, the existing Tirhoot system, and the Assam-Bihar Railway under one management, because they do not constitute a single direct through line, along which trade and traffic will flow from east to west, but a series of short links, each of which will be separately engaged in carrying goods to the nearest port on the Ganges for Calcutta: in short a set of feeders to the Ganges or to rivers like the Gandak and Kosi, tributary to the Ganges.

Even so it might be urged that a series of short links might be worked more profitably under one management than under several. But the argument seems to me to omit the case of the large passenger traffic which will, we hope and believe, spring up from west to east. Granting that goods will not be carried through from Gorakpur or Sarun, in any great extent, to Assam and *vice versa*, we are confident that a large body of emigrants will be carried through from those districts to the tea districts of Assam, and there will similarly be a large reflux of time-expired coolies revisiting their homes. The annual immigration into Assam is now about 25,000 persons: there is every probability that it will greatly increase when the facility of through railway communication is offered, and this increase will largely depend on the extent to which the journey is facilitated. The emigrants will require, at least during six months of the year, an emigrant train, in which through accommodation would be given with convenient halting-houses for rest and

food; and it seems clear that it will be easier to provide this if the whole system is placed under a single management.

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No. 108 (Railway), dated 27th October 1887.

From—The Secretary of State for India,  
To—The Government of India.

Correspondence has already passed between Your Excellency's Government and this Office in respect to the possibility of arrangements being entered into by Government with the Bengal and North-Western Railway Company, whereby that Company could undertake the completion and working of the Assam-Bihar State system of railways.

2. The views of my predecessor in Council on this proposed transfer were fully explained in his Railway Despatch No. 19, dated 4th March 1886, since which time no direct communication on the subject has been received from Your Excellency's

\* Letter from Railway Company of 13th July 1887.  
Ditto to ditto of 5th August 1887.  
Ditto from ditto of 23rd August 1887.  
Ditto to ditto of 20th October 1887.

Government and no further action in this country has been taken; but the Board of the Company have recently addressed communications\* to this Office, copies of which, and of the replies made to

the same, are herewith enclosed, setting forth in detail the terms on which they are prepared to take over and carry on the undertaking in question.

3. I shall be glad to receive an expression of Your Excellency's views on these proposals, in connection with which I would also request that consideration should be given to the observations contained in the latter part of Lord Kimberley's Despatch of the 4th March 1886, before alluded to, after reference to the Government of Bengal, whose views should be specially asked for.

4. It would be satisfactory to me if Your Excellency's Government were able to assent to some arrangement with this Company which should provide for the completion of a through line of communication across Northern Bengal, so far as that result can be shown to be desirable, and under conditions that shall meet the financial requirements of the case, and I shall be glad to be informed of your further views on the whole subject at an early date.

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Dated 12th July 1887.

From—E. L. MARRYAT, Esq., Secretary, Bengal and North-Western Railway Company,

To—The Under-Secretary of State for India.

With reference to correspondence ending with this Company's No. 493 of 10th August 1886, I am directed to enquire whether the Secretary of State is inclined to entertain any proposals, either for entrusting to this Company the working of the Behar-Assam Railway (preferably only the Tirhoot section) on an arrangement not dissimilar to that on which the Rajputana-Malwa Railway is managed by the Bombay, Baroda, and Central India Railway; or for handing over that system with such extensions as may be required (or the Tirhoot section of it) on terms based on those on which the Bengal-Nagpur Railway Company have lately taken over the Nagpur-Chhattisgarh Railway; or by a combination of the two arrangements, Government retaining the lines, and this Company purchasing and supplying the rolling-stock, receiving the usual equivalent for its provision.

In the event of the Secretary of State being disposed to seek the advantages of

private enterprise, and to secure thorough co-operation and undivided control, in developing the resources of the large railway system on the north of the Ganges, I am directed to say that this Company will be ready to meet his views in the most liberal manner consistent with guarding the interests of their shareholders, and that beyond a small commission on the net earnings of the State Railway, the Company would be willing to wait for any share in the general profit of the lines they may manage for the State until Government have received a fair return of interest on the capital cost, an event which the Directors believe they can ensure at no distant date, by unity of management, reduction of outlay, and by the promotion of local traffic between the districts served in the N.-W. Provinces and Bengal. Considering the denseness of population, and the difference in the agricultural products of these districts, the railway system connecting them is certain, by careful management, to create a large interchange of trade.

I am to add that this Company has the strongest inducement to devote its best energies to the full development of the traffic and to the attainment of all possible commercial success, not only on its own line, but on any other lines which may be attached to their undertaking.

No. 1384 P.W., dated 5th August 1887.

From—SIR JOHN E. GORST, Under-Secretary of State for India,

To—The Secretary, Bengal and North-Western Railway Company.

I am directed by the Secretary of State for India in Council to acknowledge the receipt of your letter, dated the 12th July 1887, enquiring whether His Lordship is inclined to entertain proposals for entrusting to the Bengal and North-Western Railway Company the working of the Behar-Assam State Railway.

In reply, I am instructed to inform you that Viscount Cross would be disposed to consider any specific proposals which the Directors may desire to make with respect to the management of the railway in question, so that one agency may be employed in working this system, as well as the Bengal and North-Western Railway.

No. 561, dated 23rd August 1887.

From—E. L. MARRYAT, Esq., Secretary, Bengal and North-Western Railway Company,

To—The Under-Secretary of State for India.

In reply to Sir John Gorst's letter, No. 1384 P.W. of the 5th instant, I am directed to submit, for the favourable consideration of the Secretary of State, the following specific proposal for taking over and working the Behar and Assam system of Railways by this Company—

- (a) The Bengal and North-Western Railway Company to take over, complete, and work the Behar-Assam system from the 1st January 1888.
- (b) The necessary funds for the completion, equipment, and extension of the lines to be raised by debentures guaranteed by the Secretary of State.
- (c) The lines to remain the property of the Government.
- (d) The net earnings to be applied as follows:—
  - 1st.—To the payment to the Company half-yearly of 5 per cent. thereof, for supervision.
  - 2nd.—To the payment of the debenture interest
  - 3rd.—To the payment to the Secretary of State of 4 per cent. for the calendar year on the capital outlay as it stood on 31st December 1887.

4th.—Any surplus to be divided as follows: The payments under 2nd and 3rd being deducted from the net earnings, four fifths of the remainder to belong to the Government, and the Company to have the option of taking the remaining one fifth in lieu of the amount receivable under 1st.

(e) In other respects the terms (as far as they may be applicable) to be those on which the Rajputana Railway is worked by the Bombay, Baroda, and Central India Railway Company.

2. The Company, as previously stated, would prefer to confine their operations to the lines west of the Kosi, but they are prepared, if the Government wish it, to take over the whole system. The Board, however, are of opinion that it is not at present desirable to carry out expensive bridging operations at the Kosi, nor to extend over the Teesta, except by way of cheap tramways.

No. 1675 P.W., dated 20th October 1887.

From—J. A. GODLEY, Esq., Under-Secretary of State for India,  
To—The Secretary, Bengal and North-Western Railway.

I am directed to acknowledge receipt of your letter No. 561, dated 23rd August 1887, submitting, on behalf of the Board of the Bengal and North-Western Railway Company, specific proposals for the taking over and working by that Company of the Behar and Assam State system of railways.

In reply, I am desired to inform you that Viscount Cross desires in the first place to be in possession of the latest views of the Government of India in respect to the proposed transfer. A communication has been accordingly addressed to that Government, and on receipt of a reply you will be further addressed on this subject.

No. 91 (Railway), dated 17th August 1888.

From—The Government of India,  
To—The Secretary of State for India.

With Your Lordship's Railway despatch No. 108, dated 27th October 1887, were forwarded, for an expression of our views, copies of correspondence with the Board of the Bengal and North-Western Railway Company, in which were set forth in some detail the terms on which the Company expressed themselves willing to undertake the completion of the Assam-Bihar Railway, and also the working of the Turkootee Railway. The Board, however, preferred to take over the working of the lines west of the Kosi only.

2. The general terms proposed, omitting the dates mentioned, which are now passed, were—

- (a) the Bengal and North-Western Railway Company to take over, complete, and work the Assam-Bihar system;
- (b) the necessary funds for the completion, equipment, and extension of the lines to be raised by debentures guaranteed by the Secretary of State;
- (c) the lines to remain the property of Government;
- (d) the net earnings to be applied as follows:—

1st—to the payment to the Company half-yearly of 5 per cent. thereof for supervision;

2nd—to the payment of the debenture interest;

3rd—to the payment to the Secretary of State of 4 per cent. for the calendar year on the Capital outlay as it stood on the date of transfer;

4th—any surplus to be divided as follows :—

The payments under (2) and (3) being deducted from the net earnings, four-fifths of the remainder to belong to Government, and the Company to have the option of taking the remaining one-fifth in lieu of the amount receivable under (1).

(e) In other respects the terms (as far as they may be applicable) to be those in which the Rajpootana-Malwa Railway is worked by the Bombay, Baroda and Central India Railway Company.

It was added in the letter of the Board containing these terms that the Company, though prepared to take over the whole system, would prefer to confine their operations to the lines west of the Kosi, and were of opinion that it was not desirable to undertake expensive bridging operations on the Kosi, nor to extend beyond the Teesta, except by means of cheap tramways.

3. These proposals were, in the first instance, referred for the opinion of the Government of Bengal, whose reply is enclosed for Your Lordship's information.

No. 2545R, dated 17th December 1887 (enclosure 1).

In this reply the proposals for the transfer to the Company of the working—

- (i) of the combined Tirhoot and Assam-Behar system, and
- (ii) of the system west of the Kosi River,

are considered separately.

4. In regard to the first of these schemes, the opinion of the Local Government may be summarised as follows :—

(a) that there is no such urgent necessity for completing through communication across the Kosi, and from Kaunia to Dhubri as would justify the heavy outlay required, or as would warrant any sacrifice of existing advantages for the sake of obtaining it.

Para. 6 of letter.

(b) That there is no probability of any great development of through traffic between Tirhoot and Dhubri in consequence of the completion of such a line. (In this paragraph the Bengal Government adopts and develops the opinion expressed in paragraph 6 of your predecessor's Railway Despatch No. 19, dated 4th March 1886.)

Para. 6 of letter.

(c) That even should such a development ensue, the benefit to be derived from the transfer of the management of the through route to a Company would not counterbalance the loss of the administrative and other advantages which accrue to the Government of Bengal from the maintenance in its own hands of the East Kosi system of lines, of which the Northern Bengal Railway is the trunk, and the combination of which with the Eastern Bengal system will lead to great economy in working and management.

Para. 6 of letter.

(d) In the absence of any proposal from the Company to purchase the existing system and thus set free funds for further Imperial requirements, the Lieutenant-Governor fails to perceive any financial advantage from the proposed transfer.

Para. 8 of letter.

5. To the second of the two schemes the opposition of the Government of Bengal is not so strong, but the balance of advantage appears to that Government to be against this transfer also for the following reasons :—

See end of para. 12 of letter.

(a) Any such transfer would necessitate an adjustment between the Imperial and Provincial Governments, in which allowance must be made for the rapid improvement in the earnings which has taken place since the Provincial contract was made.

Para. 11 of letter.

- (b) The transfer is objected to on administrative grounds, as the Tirhoot Railway is believed to be better managed than the Bengal and North-Western Railway, and the present organisation can be revised in a more economical manner.

Para. 12 of letter.

- (c) In paragraph 13 of the letter, the Government of Bengal examines in some detail the terms proposed in the letter from the Secretary to the London Board of the Bengal and North-Western Railway Company, enclosed in your letter under reply, which terms in some respects are considered to be too favourable to the Company.

No 561, dated 23rd August 1887.

6. Lastly, the Lieutenant-Governor remarks that the deprovincialisation of

Para. 14 of letter.

State Railways in Bengal will deprive the province of a source of elastic and increasing revenue, and must therefore be detrimental to the efficiency of the administration; and sums up by saying that on a consideration of the whole question, he is opposed to the acceptance of either of the proposals which have been referred for opinion.

7. With regard to the first portion of the Company's proposals, we were from the beginning in full accord with the Bengal Government, and our views may be concisely stated as follows:—

- (a) The construction of a permanent line from Kaunia to Dhubri is estimated to cost about 73 lakhs; and it would be convenient for two purposes—the through conveyance of coolies and other emigrants to Assam, and the carriage of Makum coal. In neither case do we consider that the receipts from the probable traffic would justify the expenditure. The inconvenience of three turns-out between Kaunia and Dhubri is not very great in the case of native travellers; and the coal can reach the Assam-Bihar Railway by a slightly longer route *via* Sara.

- (b) From the Kosi to Kaunia the line is nearly made: it is estimated to cost about 42 lakhs more, of which 25½ are provided in the present year's budget. No gain, but a loss, would arise from allowing the Company to raise this capital on a guarantee of 3½ per cent. when Government can borrow at nearly 3 per cent. The line is managed by the staff of the Eastern Bengal Railway System, and if it were managed by a Company, the superior staff of the State Railway System would be hardly changed, while the incidence of cost would be heavier.

- (c) As to the suggestion of the Company repaying the capital already expended, 332 lakhs, the result would merely be that, instead of paying 3 or 3½ per cent. as now, the Government would have to pay 3½ per cent. interest and no corresponding advantage would be gained.

- (d) The same objection applies to the suggestion that the Company should raise the small sum required (about 5 lakhs) to finish the line west of the Kosi. This sum is provided in the current year's budget, and the construction will be completed by the State.

8. The only question that remained open to consideration was whether the working lease of the Tirhoot line west of the Kosi should be granted to the Bengal and North-Western Railway Company, and if so, on what terms.

9. It was apparent to us at once that the terms proposed by the Company and summarised in paragraph 2 above could not be accepted. There is no justification for a payment of 5 per cent. to the Company on account of supervision: the advantage which the Company should expect from such an amalgamation must arise from

the lessened incidence of management charges, and from any increase of traffic which they might be able to bring about. Accordingly, it was informally intimated to the representative of the Company in this country that the only terms on which the Government could treat would be on the basis of a sliding percentage of gross receipts, the ratio decreasing with increased receipts; and it was understood in reply that such a basis would be accepted.

10. Two difficulties met us when engaged in fixing a basis for any such agreement: one was the rapid improvement and development which has taken place in the traffic of the line, the continuance of which it is not easy to estimate; the other was the discovery that in certain branches of management considerable economy could and ought to be effected in the Tirhoot line even if no amalgamation should take place. For the first hint as to the direction in which such reductions could be carried out we are indebted to Mr. Izat, the Agent and Chief Engineer of the Bengal and North-Western Railway. We considered, it necessary to have these questions examined in detail, and append a Note by our Accountant General in the Public Works Department, in which figures are given showing the past and probable future expenditure on the lines in question; and the probable results to Government and the Company of the transfer of the West Kosi System are analysed.

Note by Colonel A. J. Filgate, R.E., Accountant-General, Public Works Department, dated 21st February 1888 (enclosure 2).

11. Colonel Filgate's calculations may be summed up thus. The working expenses of the Tirhoot Railway for the year 1887-88 were at that time estimated at Rs10,25,000: they have turned out actually to be Rs10,60,000. Three assumptions are made by Colonel Filgate. Under the first, reductions can be made in the Station, Train, and Office establishment, amounting to Rs6,500 per mensem, or Rs78,000 per annum; reducing expenditure to Rs10,25,000 minus 78,000 = Rs9,47,000 (condition 2 of paragraph 23 of the Note). Under the second, not only the inferior staff as above but the whole of the superior staff also could be reduced, the entire work being done by the existing Bengal and North-Western staff with enlarged jurisdiction and no increase of pay. On this assumption, while the Bengal and North-Western Railway expenditure would be reduced by Rs62,000, the Tirhoot expenditure would be reduced by Rs94,000 a year, and would come down to Rs9,31,000 (condition 4 of paragraph 23). But it is obvious that this assumption is untenable, as Government would then have on its hands a large surplus staff which it would have no means of providing for. A third assumption was therefore made, that the State should remove and employ elsewhere the Manager and the Examiner of Accounts, but that the Company should agree to take over and keep all the rest of the staff; and on this datum, while the Bengal and North-Western Railway would save Rs47,000, there would be effected on the Tirhoot Railway a reduction of Rs3,000, bringing the expenditure down to Rs9,42,000 (condition 6 of paragraph 23). After some further consideration of these figures in our Financial Department, we came to the conclusion that the Government could fairly claim, in addition to the above saving of Rs3,000, a half of the saving to be effected in the staff of the Bengal and North Western Railway consequent on the amalgamation, and that the figure at which the reduced working expenses might fairly be taken (assuming the revised estimate of Rs10,25,000 to be correct) was Rs9,20,000.

12. Accordingly we forwarded to the Bengal Government a copy of the Note by our Accountant General, together with a suggestion that a fair proposal to make to the Bengal and North-Western Railway Company would be as follows:—

- (a) That they should take over and employ all our superior pensionable staff, except the Manager and Examiner of Accounts.
- (b) That the working expenses of the first year should be estimated at Rs9,20,000 on an estimated gross receipt of Rs18,00,000, giving a percentage of 51.2; and that for each increase of a lakh in the gross



receipts there should be a decrease of 0·5 per cent. in the ratio of working expenses. The following table illustrates this calculation :—

Gross receipts.	Working expenses.	Net profits.	Percentage.
18,00,000	9,20,000	8,80,000	51·2
19,00,000	9,63,000	9,37,000	50·7
20,00,000	10,09,000	9,96,000	50·2
21,00,000	10,44,000	10,56,000	49·7
22,00,000	10,82,000	11,18,000	49·2

Bengal Financial Department letter No. 198 T.F., dated 5th July 1888 (enclosure 3).

13. The reply of the Bengal Government to this reference is enclosed.

14. As to the receipts, an error occurs in paragraph 3 of the Bengal letter, in which the gross receipts for 1887-88 were taken from the last Revised Estimate, and were entered at R18,51,000; whereas the account now received shews that the actual receipts of the year were R18,05,000 only; and this more or less affects the conclusions arrived at.

15. As to the working expenses, those for 1887-88 are correctly given at R10,60,000; but from this sum the Bengal Government considers that large deductions aggregating R2,61,600 should be made before drawing from the results of that year any conclusions with regard to the future.

The first deduction is an item of R70,000 expended in that year on a temporary line of 6 miles in length caused by the formation of a shoal; and besides this, there was the additional haulage over this length. As no such emergency has arisen till 1887-88 since the line was opened, it would not, the Lieutenant-Governor considers be fair to include such a charge in the estimate of future working expenses of the next four years.

The next item is a sum of R35,000 on account of hire of rolling-stock. The explanation of this is that the old contract for the hire of stock from the Bengal and North-Western Railway expired on 31st March 1888, and a new contract is now in force under which, had it been in force in 1887-88, the payments for that year would have been reduced by this amount.

Thirdly, the Bengal Government claim that they have already effected the greater part of reduction of R78,000 suggested in the Station, Train, and Office Establishment: see assumption (1) of paragraph 11 above.

Fourthly, they claim that next year by amalgamation of the Tirhoot line with the Eastern Bengal Railway System, they will be able to effect the entire reduction of assumption (2), paragraph 11, and make a further saving of R78,600.

16. The corrected figure should be according to this contention—

	R	R
Actual working expenses of 1887-88 . . . . .	...	10,60,000
Deduct (1) . . . . .	70,000	
(2) . . . . .	35,000	
(3) . . . . .	78,000	
(4) . . . . .	78,600	
	<hr/>	2,67,600
Future working expenses . . . . .	...	7,98,400

17. Of these deductions we admit (2) and (3). The fourth is inadmissible, on the same ground on which we rejected assumption (2) of paragraph 11: it can only be effected by throwing back on the hands of Government a large surplus staff which could not be employed, and so no real economy would be effected. And even if such an arrangement were practicable, the saving should not be credited to the Tirhoot line alone but should be distributed over the Tirhoot and the Eastern Bengal System, just as in Colonel Filgate's note it was distributed over the Bengas and North-Western and Tirhoot Railways. In other words, if the surplus establish-

ment could be absorbed, there would be a real saving effected by Government through the amalgamation of the Tirhoot and Eastern Bengal System; but this saving is an argument in favour of that amalgamation, as a counter-proposition in preference to amalgamating the Tirhoot, with the Bengal and North-Western line: it cannot be used in calculating the fair working expenses of the Tirhoot line as a basis for an agreement with the Bengal and North-Western Railway.

18. As to the first deduction, we are disposed to say that something might be allowed; but that where one unforeseen expenditure has occurred in 1887-88, another will probably occur in 1888-89: and the Railway statistics for the three last years lead us to think that any such figures as the Bengal Government has put forward as the probable working expenses on a gross income of 18 lakhs is outside reasonable limits of anticipation:—

Year.	Gross receipts.	Working expenses.	Percentage of Working expenses on Gross receipts.
1885-86 . . . .	12,80,000	9,16,000	71·5
1886-87 . . . .	15,99,000	9,86,000	61·7
1887-88 . . . .	18,05,000	10,60,000	58·7

On the whole, allowing deductions (2) and (3) in their entirety and a moderate figure for (1), we are still inclined to estimate the fair rate of working expenses on 18 lakhs as Rs9,20,000, or at the lowest Rs9,00,000, or 50 per cent. The present Manager, however, who has been carrying out economical reforms with much vigour, believes that he will be able to bring down the ratio of working expenses to 48 per cent. on a gross revenue of 19 lakhs.

19. If, therefore, the Company were to be offered a lease, we do not think that anything in excess of 48 per cent. of the gross receipts of 19 lakhs, with a reduction at the rate of ·5 per cent. for every lakh in excess and an addition of a like amount for every lakh in defect, should be offered; and this on the understanding that they take over and employ the whole of our superior pensionable staff except the Manager and Examiner.

20. It will be seen then that the estimates of the Bengal Government and Government of India as to the future profits of the Tirhoot lines if amalgamated with the Bengal and North-Western Railway are widely different.

The Government of Bengal adopts a scale which, starting on the supposed basis of 1887, assumes an increase in working expenses at 25 per cent. of the increase in receipts, and further assumes a normal growth of receipts to the extent of 2 lakhs a year.

Year.	BENGAL GOVERNMENT.				GOVERNMENT OF INDIA.			
	Gross receipts, in lakhs.	Working expenses.	Percentage.	Net earnings.	Gross receipts, in lakhs.	Working expenses.	Percentage.	Net earnings.
	₹	₹	₹	₹	₹	₹	₹	₹
1888-89 .	20	8,60,000	43·00	11,40,000	19	9,12,000	46·00	9,88,000
1889-90 .	22	9,10,000	41·36	12,90,000	20	9,50,000	47·50	10,50,000
1890-91 .	24	9,60,000	40·00	13,40,000	21	9,87,000	47·00	11,13,000
1891-92 .	26	10,10,000	38·85	14,90,000	22	10,23,000	46·50	11,77,000

We think the estimate of the Bengal Government too high, and that Government will reciprocally object to our estimate, and consider itself aggrieved if an

offer is made to the Company on these terms. On the other hand, we are inclined to think the Company would probably reject them as too hard.

21. There is a further question of general principle which should not be forgotten in considering this transfer.

We have now at our disposal a large body of officers in the Engineer and Revenue branches of the State Railway Department; and owing to various causes, that staff is even now in excess of our requirements. If the work to be carried out by that Department is still further reduced by the transfer of this and other State Railways to Companies, we shall have either to pay our officers more than their work justifies, or we shall be compelled to discharge them. If men who are discharged are pensionable, a permanent charge is entailed on our finances, and in any case much avoidable dissatisfaction and discontent are occasioned, not only amongst those immediately affected but also amongst those who remain, who do not know that they may not be the next sufferers.

The Company may indeed take over a portion of the establishment; but this is only an alleviation of the evil, and there are many disadvantages in connection with the employment of our pensionable establishments in this manner, as experience has shown. In a short time, too, the worst of the staff would probably be returned on our hands, and the best retained.

On this ground, if on no other, as long as the strength of our Railway Branch continues in its present congested condition, we deprecate the transfer of State lines to the management of Companies, excepting in special cases such as that of short branches which cannot be economically worked alone, and cannot be conveniently amalgamated with other State lines.

22. Under these circumstances, considering (a) that the Tirhoot Railway is, in its inception and management, a purely Provincial line, and that any separation of it from Provincial interests would be contrary to our general policy of transfer of work and responsibility to Local Governments; (b) that the Bengal Government is strongly opposed to the transfer and that we should be unwilling to press any proposal which that Government can shew a fair reason for supposing to be prejudicial to its interests; (c) that it is probable that whatever economy can be effected by amalgamating the Tirhoot line with the Bengal and North-Western can be equally obtained by amalgamating it with the Eastern Bengal System, we are of opinion that the offer of the terms indicated in the penultimate paragraph should not be made to the Company, and that negotiations should be dropped.

[ENCLOSURE NO. 1 OF RAILWAY DESPATCH NO. 91 OF 1888.]

No. 2805 R., dated 17th December 1887.

From—Colonel C. M. BROWNE, R.E., Offg. Secy. to the Govt. of Bengal,  
Public Works Department,

To—The Secretary to the Government of India, Public Works Department.

I am desired to acknowledge the receipt of your endorsement No. 1214 R.C., dated the 23rd November 1887, forwarding, for early opinion, a copy of the Secretary of State's Despatch No. 108 Ry., dated the 27th October 1887, with the accompanying documents, containing proposals for working the Tirhoot and Assam-Bihar State Railways through the agency of the Bengal and North-Western Railway Company, and I am directed to reply thereto as follows.

2. I am to observe that while the Secretary of State favours conditionally the idea of the Company undertaking the management of "a through line of communication across Northern Bengal," which involves the transfer of the whole system of line referred to in your Despatch No. 72 Ry., dated the 26th May 1883, as the Assam-Bihar State Railway, together with the remaining sections of the Tirhoot

State Railway, the Company would prefer not to extend their operations farther east than the Kosi River. Two separate proposals would therefore appear to be before this Government for consideration, *viz.*, the transfer of the working to the Company of—

(i) The combined Tirhoot and Assam-Bihar System :

(ii) The Tirhoot, *i. e.*, West Kosi System only ;

and these will now be separately dealt with.

3 As regards the first proposal, I am to state that the advisability of completing through railway connection at heavy expense between Tirhoot and the Brahmaputra must be judged with reference to the manner in which such a line would be likely to serve the requirements, *first*, of the produce of the districts served, and, *second* of the Assam coolie traffic.

4. With respect to the first requirement, I am to point out that the produce of the district traversed by the Bengal and North-Western, the Tirhoot, the Assam-Bihar, and the Northern Bengal Railways finds its outlets, and changes hands, at Calcutta, and at one or two great marts, of which Patna is the principal, on the Ganges. There neither is, nor in the opinion of this Government is there ever likely to be, any important flow of goods traffic east and west between Oudh and Assam ; the general tendency of traffic is towards the Ganges marts, or towards the main lines of railway leading down to Calcutta, or to a lesser extent towards Northern Indian markets. The whole of the lines north of the Ganges and Gogra may be fitly compared to three systems of rivers. To the extreme west is the Bengal and North-Western System which drains into the great mart of Patna and towards Calcutta, *vid* the Digha ferry, the produce of the districts lying between the Gogra and the Gandak. Next comes the Tirhoot System of lines, including some sections of what is known as the Assam-Bihar State Railway, which delivers towards Patna and Calcutta, *vid* the Digha and Mokameh ferries, the produce of the districts lying between the Gandak and the Kosi. Next comes the great system of which the main trunk is the Northern Bengal State Railway, and of which the feeders are the East Kosi sections of the Assam-Bihar State Railway, Kaunia-Dharia lines, and the Darjeeling-Himalayan Company's line ; this system delivers on to the Eastern Bengal State Railway, at Sara, the produce of the districts lying between the Kosi and the Brahmaputra. Pending the completion of through connection, at the end of 1888, of the Nathpur-Manihari Section with the Northern Bengal State Railway at Parbati-pur, the produce of the western portion of this last mentioned system, so far as it has been opened for traffic, finds its way on to the East Indian Railway at Sahebgunj, but when through communication has been established, the bulk of the traffic of those western districts will doubtless be carried over the Northern and Eastern Bengal State Railways. The Lieutenant-Governor is wung to admit that, as has occurred since the connection, by the Gandak bridge, of the first and second systems, the junction of the second and third by a communication across the Kosi will probably bring into existence a certain interchange of produce between the districts lying on either side of that river ; but the general tendency of the flow of the larger share of the produce of the North Ganges districts will continue to be towards Calcutta, and there appears to be no valid reasons for expecting the development of such a cross flow of goods traffic as a result of the completion of through communication as would be at all commensurate with the expenditure involved.

5. Next as regards the coolie traffic towards Upper Assam. The Lieutenant-Governor conceives that the completion of through communication is chiefly desired in its interests. This traffic has, however, failed up to the present to attain any great proportions as measured by a railway standard, and from his personal knowledge of its conditions, Sir Stuart Bayley is of opinion that its dimensions would for some time be but slightly affected by the further improvement of the facilities for travel which it is proposed to provide. The advantages to be gained by carrying on the line to Dhubri are no doubt considerable, but as regards the special

description of traffic under notice, I am particularly to press this point, that the present facilities afforded to coolies who travel by that route to Assam are sufficiently great to render it improbable that the improvement of the section to Dhubri *only* would have any important influence in increasing the coolie traffic, and certainly no such improvement may be anticipated as would recoup the heavy outlay estimated for the provision of a permanent line between Kaunia and Dhubri. I am to add, moreover, that the small portion of traffic which may be expected from East Tirhoot, and which would certainly profit by a permanent crossing over the Kosi at Pertabganj, is neither intrinsically nor relatively an element of any importance.

6. Whether, therefore, the requirements of the flow of produce or of the coolie traffic be considered, the Lieutenant-Governor arrives at the following conclusions with reference to the first proposal : *first*, that there is no such urgent necessity for the completion of through communication across the Kosi and between Kaunia and Dhubri as would warrant the sacrifice by Government of any existing advantages for the sake of obtaining it ; *second*, that there is no probability of any great development of traffic along the tortuous route which would be formed by the proposed connection of the Tirhoot System with Dhubri ; and *third*, that even were such a development to ensue, the benefit to be derived from the transfer of the management of the through route to a Company would not counterbalance the loss of the administrative and other advantages which accrue to this Government from the maintenance by its own hands of the east Kosi system of lines, of which the Northern Bengal State Railway is the trunk. On this point I am to refer you to para. 6 of my letter No. 1807 R., dated 16th August 1887, which deals with the objections to surrendering the management of the latter line, and it is obvious that the cheap and remunerative working of the Eastern Bengal System of State Railways will be greatly facilitated by combining with it, under the same supervision, the working of the feeder lines east of the Kosi.

7. Adverting now to the second condition of the Secretary of State's consent, contained in the Despatch under disposal, to arrangements being entered into with the Company for the completion of through communication across Northern Bengal, *viz.*, that the financial requirements of the case can be satisfied, I am desired to communicate the following observations.

8. The Lieutenant-Governor has always understood that (apart from such special conditions as justified the transfer, at some loss to the State of the Rajputana-Malwa line to the Bombay, Baroda and Central India Railway Company, or of the East Indian Railway under different conditions to another Company) the principal inducement for handing over State lines to be owned and worked by private enterprise is, that State expenditure is thereby recovered and set free for Imperial requirements. In the absence, in the present case, of any proposals on the Company's part to purchase the State lines which they desire to take over, the Lieutenant-Governor fails to perceive where the financial advantage lies. It is suggested that the necessary funds for the completion of the system to Dhubri should be provided by the issue by the Company of debentures upon which 3½ per cent. should be guaranteed. But on these debentures, I am to observe that the Company proposed that the interest should be a preference charge against the net earnings of the State sections of the system. When the terms proposed in their letter No. 561, dated the 23rd August 1887, are examined with reference to their effect upon the income likely to be derived from the lines proposed to be taken over, it becomes apparent that the net earnings of these sections must exhibit a marked improvement over present or anticipated figures, before they can afford to be saddled with preference charges to the extent suggested. I am to state that the more probable result will be a considerable reduction of the percentages earned on the capital of the State sections ; the Company, on the other hand, being fully guaranteed against any loss on the debenture capital to be raised for the proposed extension.

3. Were it proposed that the Company should purchase the whole system from

Dhubri westward, recouping the State for existing outlay and providing funds for further expenditure by means of a loan to be raised under a State guarantee, then, provided that the guarantee were no higher than the interest at which such a loan could be raised by the Secretary of State in his own name, the Lieutenant-Governor could conceive of advantages from such a policy which might be considered as compensating for the loss of the important administrative convenience which results from the direct State control. But no such proposal is now under consideration; no financial relief is offered, nor is there evidence of any advantage likely to be afforded by amalgamating the management of the sections which form a zig-zag line across Northern Bengal. For these reasons, therefore, and for others which have been already referred to, the Lieutenant-Governor is not prepared to recommend the surrender to the Company of the management of the sections of railway connecting Dhubri with Sonapur.

10. It remains now to consider the second proposal, *viz.*, the suggestion which has been preferentially put forward by the Company, to the effect that, upon certain specified conditions, they should take over and work the West Kosi system of State lines. Subject to the observance of certain precautions, the arguments against the acceptance of this second proposal appear to the Lieutenant-Governor to be of less cogency than those which have induced him to reject the more extended scheme; and, with reference to it, I am desired to record the following remarks, pointing out that the reasons for and against the transfer of the Tirhoot system may be classed as first, financial, and second, administrative.

11. As regards the financial effects, I am to intimate that this is a matter which so far as it is estimated as likely to affect the financial position of Bengal during the remainder of the current contract period, must, in the Lieutenant-Governor's opinion, form the subject of adjustment between the Provincial and Imperial Governments. Sir Stuart Bayley would be unwilling, in such a matter, to deal with any Company directly, and in discussing with the Government of India the terms of the re-adjustment of the Provincial assignment which will necessarily follow any de-provincialisation of the Tirhoot system, this Government would claim, as the basis of the arrangement, the improved prospects of the line, as evidenced by the superiority of the results of the present year's working over those which were forecasted a year ago, when the terms of the current contract were settled. As under the terms proposed for the transfer of the system, the Imperial Government will profit by the improvement in net earnings the acceptance of such evidence, for the re-adjustment of the assignment, will not be unfair.

12. To arrive at a satisfactory decision as to the wisdom, from the administrative point of view, of acceding to the Company's alternative proposal, appears to the Lieutenant-Governor to be a matter of great difficulty. The inducements offered by the Company are the economy and unity of management which would be likely to result from the amalgamation of two comparatively short systems. The disproportionate cost of management which is exhibited in the statistics of the Tirhoot line is, however, due less to the small mileage of the system than to the present organisation. This difficulty can be surmounted by the selection of a working staff whose cost shall be proportionate, on commercial principles, to the magnitude of the work to be done. Too much stress should therefore not be attached to this consideration. The efficient service of goods and passenger traffic is, however, in the Lieutenant-Governor's opinion, a matter of higher importance; and it will be essential that any agreement with a Company be expressed in such terms as will be likely to ensure efficient Government control over the rates both for passengers and goods, as well as the requisite degree of efficiency of working. It appears to be at least doubtful whether the management of the Bengal and North-Western Railway is so superior in efficiency to that of the Tirhoot line as to justify much expectation on this score. A reference on this second proposal has been made to Mr. H. Bell, Manager, Tirhoot State Railway, and I am requested to append for informa-

tion the accompanying memorandum furnished by that officer. I am now to state that, after a careful examination of the Company's alternative proposal, Sir Steuart Bayley is of opinion that no adequate considerations have been adduced in the conditions now specified which would render it advantageous for Government to transfer the working of the Tirhoot system to the Company, and His Honour is accordingly not prepared to support even this second proposal.

13. The financial bearings of the several conditions defined in clauses (d) and (e) of letter No. 561, dated 23rd August 1887, of the Secretary to the Bengal and North-Western Railway, now require notice in greater detail. Commenting first on the most important, I am to remark that, on the supposition that the entire Assam-Bihar system is transferred, the second item of clause (d), *viz.*, the incidence of debenture interest for extensions as a preference charge against net earnings, would in His Honour's opinion, be open, as before explained, to the grave objection that when added to the proposed percentage for remuneration to the Company, it would probably swamp the State line as a profitable investment. As regards the Tirhoot section solely, the case as regards this particular item stands differently. When the grant which has been provisionally allotted for next year has been expended, the extensions under construction will be practically complete; any minor further extensions which may be contemplated, such as the branch to Sitamarhi, would be the subject of mature consideration, and would not be undertaken without full evidence of their probable remunerativeness; debenture interest, therefore, upon the capital supplied by a Company for the Tirhoot section would be a comparatively small amount. Adverting now to the first item of clause (d). The objection which suggests itself to the acceptance of the Company's proposal is, that the payment therein demanded is on account of control which is at present efficiently performed by Government, and the transfer of these administrative duties to a Company would result in no corresponding saving of expense, and above a certain percentage, will prove a certain and increasing loss; to agree, therefore, to this item of the Company's terms would be to gratuitously surrender a considerable share of net earnings with no corresponding decrease in State expenditure. The third item of clause (d), in so far as the net earnings will permit after payment of preference charges, appears unobjectionable. The value, however, of the offer of the Company to secure the 4 per cent. is limited to the extent of net earnings, less the two preference charges already noticed; nothing in the shape of a guarantee has been, or probably could be, offered by them. The fourth item of clause (d) appears to the Lieutenant-Governor to be fair, but it will only come into practical effect after net earnings exceed 4 per cent. by the amount of preference charges. As regards clause (e), I am to state that the details need careful study in the light of the experience gained as to the working of similar contracts elsewhere before any definite conclusion as to their suitability can be formed; as regards this condition, therefore, His Honour reserves his opinion.

14. In conclusion, I am to communicate the following additional observations. Notwithstanding the possibility of arranging with the Government of India for such a re-adjustment of the Provincial assignment, as will suffice to cover the loss of anticipated profits during the remainder of the current contract period, the Lieutenant-Governor cannot but feel that the deprovincialisation of State Railways deprives the province of a source of revenue which possesses an elasticity not exhibited by the other sources of provincial income. The existence of such a source of revenue cannot but be conducive to improved energy and efficiency of administration, and, as such, it has claims to consideration which would not be entirely compensated by the equivalent in the form of an increase in the Provincial share of the land revenue. It is, moreover, necessary to bear in mind that some of the secondary results of the transfer of the line will be, that the State will be to some extent embarrassed by pensionable servants being thrown back on an already surplus establishment, and that the pension list is likely to be to some extent augmented.

For these and other weighty reasons which have been recorded, I am directed to intimate that the Lieutenant-Governor is averse to recommend the acceptance of either of the proposals which have been referred for opinion.

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*Note, dated 8th December 1887, by Mr. HORACE BELL, Manager, Tirhoot State Railway, on the proposal of the Bengal and North-Western Railway Company to lease the Tirhoot and Assam-Rehar State Railways.*

I have read the papers lately submitted to the Government of Bengal on this subject, and have had the advantage of seeing Mr. Spring's three notes. I may assume that we are not required to discuss general principles or policy, but if I had to say anything upon the present ideas of making over all our railways to Companies, there would be a good deal to urge against it. I should acknowledge that with our present system we have some difficulty in ensuring the same freedom and elasticity in working that is generally possible under the administration of a Company, and unless and until we alter our system of providing establishment for our State lines, we cannot work as economically as a Company can. But we can command good men, as is shown by the fact that many of the Company's lines are manned by officers of the Public Works Department, and we have no reason to suppose that they are in any way inferior to the men who have been recruited directly by the Companies. I have never been able to understand our present policy. We are throwing our railway revenues into the hands of shareholders in England, and borrowing money through them at higher rate of interest than we need pay ourselves, and for what, for an idea, *viz.*, that we cannot work railways as well as companies can, or that Indian securities would be damaged by borrowing our money direct. If we had all the net profits, present and prospective, of our Indian railways, instead of only a part, we should not need our income-tax, or be hampered as we now are in our ways and means.

2. The proposals of the Bengal and North-Western Railway Company may easily be taken to mean that the Company does not desire to have anything to do with the lines on the east of the Kosi, and I have no hesitation in holding that we must consider this river as being practically an insuperable barrier to the junction of the railways on each side of it. We must, therefore, regard them and deal with them from this point of view as well as from that which would show the lines on the outside to be naturally a portion of the *resseau* of the Eastern Bengal Railway. The only reason in fact why the Bengal and North-Western Railway should have anything to do on the east of the Kosi, seems to be in order to get them to raise the money for us to make the Dhubri line. This does not seem to me to be a sufficient reason, and I much doubt, moreover, whether it is wise to spend any more money on a line to or towards Dhubri at present. It would certainly at its best never pay more than two per cent. on its outlay, and when the line from Chittagong is made, it may be expected that Assam will be supplied with food and English imports, and send its produce by this route. Thus the Dhubri route will have little left in time but coolie traffic, and the revenue to be derived from this is, I know well, from what I see as Manager of the Tirhoot line, largely over-estimated.

3. In a note written about a year ago, I said that I thought it might be advisable for certain reasons to make over the Tirhoot lines, *viz.*, west of the Kosi, to the Bengal and North-Western Railway. I am not now so sure that this would be a wise step. I do not like the proposal of giving the Company a percentage on the net earnings. This does not seem to me to afford a sufficient stimulus to the working of the railway, nor does it, as far as I understand the Company's proposal, ensure that the Government shall, as it can fairly expect, get now at least four per cent. on the Capital spent. The interests of the Bengal Government on this line are two-fold—one permanent, *viz.*, in the development of one of the richest parts of the province, the other temporary, in its being, during the remainder of the present finan-



cial contract period, one of the factors in the settlement. I assume that at the expiration of the present contract this factor could be eliminated, on the assumption that the line is dealt with, as I think it should be, by the Government of India direct. My estimate of the immediate future of the line, from a fiscal point of view solely, is that it is now nearly a four per cent concern, and that, within the next four or five years, it will probably rise to four and a half per cent., but a series of bad reasons may alter all this and we must not be too sanguine. The Bengal and North-Western Railway can, as I know, if they work their own and the Tirhoot together, make such reductions in establishment as would afford a sum equal to, say, a half per cent. on the Tirhoot capital; but we cannot expect to get all this.

4. My recommendations would be as follows :—

- (a) to decline the proposal of the Company as regards lines east of the Kosi;
- (b) to assent to the leasing of the Tirhoot lines on the Company guaranteeing 4 per cent. for the first five years and  $4\frac{1}{2}$  per cent. after that on the capital outlay, and that all surplus profits over and above this shall be divided between Government and the Company in the proportion of three-fourths to the former and quarter to the latter;
- (c) other conditions similar to the agreement for working the Rajputana line by the Bombay, Baroda and Central India Railway, but adding a clause that all general establishment charges on the combined lines be debited to each in mileage proportion. References would also have to be made to the Company taking over our Flotilla.

5. There will be the usual difficulty, if the line is made over, in providing for our staff. It is not likely that the Agent, Bengal and North-Western Railway, will keep many of our men. They are too good for him, and we must do our best for them. Clause 12 of the Rajputana agreement would meet this, I think, *viz.*, that the undertaking would have to provide pensions and gratuities to men discharged. This would tend to moderate any desire to effect very sudden or radical change in the staff.

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[ENCLOSURE No 2 OF RAILWAY DESPATCH No. 91 OF 1888.]

*Note, dated the 21st February 1888, by* LIEUTENANT-COLONEL A. J. FILGATE,  
R. E., *Accountant General, Public Works Department.*

I send forward herewith a revised note on the proposal to make over the Tirhoot State Railway to the Bengal and North-Western Railway Company, based on the corrected figures of the latter Railway.

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#### NOTE.

1. The Company's proposals are—

- (a) to take over and work the Assam-Bihar System from the 1st January 1888;
- (b) the necessary funds for the completion, equipment, and extension of the lines to be raised by debentures guaranteed by the Secretary of State;
- (c) the lines to remain the property of Government;
- (d) the net earnings to be applied as follows :—
  - 1st—to the payment to the Company half-yearly of 5 per cent. of such net earnings for supervision ;
  - 2nd—to the payment of debenture interest ;
  - 3rd—to the payment to the Secretary of State of 4 per cent. for the calendar year on the Capital outlay as it stands on 31st December 1887 ;

4th—any surplus to be divided as under :—

The payment under 2nd and 3rd heads being deducted from the net earnings, four-fifths of the remainder to belong to Government, and the Company to have the option of taking the remaining one-fifth in lieu of the amount payable under the 1st head.

(e) In all other respects, the terms (as far as they are applicable) to be those on which the Rajputana Railway is worked by the Bombay, Baroda and Central India Railway Company.

2. The Company would prefer to confine their operations to the lines west of the Kosi, i.e., the present Tirhoot State Railway; but, if desired, they will take over the Assam-Bihar section of the Assam-Bihar State Railway, the line from Dinajpur to Kaunia, and also the construction of the line from Kaunia to Dhubri on the metre gauge. They are, however, of opinion that it is not desirable to make a permanent crossing at the Kosi, nor to extend over the Teesta, except by way of cheap tramways.

3. The Company does *not* propose to recoup to Government the outlay already incurred by the State on the construction of these Railways.

4. The outlay likely to be incurred on these lines up to the end of 1887-88 is compared in the following statement with the balance likely to be needed to complete the existing estimates :—

	Miles.	Outlay to end of 1885-86.	Outlay in 1886-87.	Existing grant, 1887-88.	Total to end of 1887-88.	Balance required to complete.	Total.	Sanctioned Estimate.
		₹	₹	₹	₹	₹	₹	₹
<b>WESTERN SECTION.</b>								
Semaria to Bettiah and Durbhanga, Dinajpur to Jhanjpur, Hajipur Branch	225 75	1,52,70,705	2,70,387	3,49,000	1,58,90,102	Com- pleted, open for traffic.	1,58,90,102	...
Sonepur to Hajipur, Jhanjpur to Kosi.	3'50 44'00	33,10,030	7,74,861	7,63,000	45,47,891	5,67,000*	51,14,891	{ 20,99,519 32,43,466
	273'25	1,82,81,735	10,45,258	11,12,000	2,04,37,993	5,67,000	2,10,04,993	...
<b>EASTERN EXTENSION.</b>								
Kosi to Dinajpur with Monihari Branch, Dinajpur to Kaunia—Open line, Northern Bengal Railway, Kaunia to Dhubri.	155'50	46,87,835	16,55,191	16,14,000	79,56,826†	36,69,228‡	1,16,26,054	1,07,26,054§
	52'75	47,24,533	35,986	23,200	47,83,719†	...	47,83,719	...
	57'50	...	...	...	...	73,34,176†	3,34,176	73,734,176
	265'75	94,12,168	16,91,177	16,37,200	1,27,40,545	1,10,03,404	2,37,43,949	...
	539'00	2,76,92,903	27,36,435	27,49,200	3,31,78,538	1,15,70,404	4,47,48,942	...

\* Represents demand for 1888-89, said to be sufficient to complete; section is partly open for traffic.

† Calculated on a mileage basis.

‡ Balance of sanctioned estimate.

§ A revised estimate is being prepared for this line, which will probably show an excess of about 9 lakhs over the present sanctioned estimate.

5. Under the Company's proposals they will have to raise the following amounts by debentures guaranteed by the State :—

A—If the line made over is confined to the west of the Kosi, R5,67,000.

B—If the whole line is made over, but the metre-gauge line is confined to the west of the Teesta, R42,36,228.

C—If the whole line is made over, and the metre-gauge extension to Dhubri is constructed, R1,15,70,404.

To these figures something must be added for further outlay on open line. Considerable outlay will also be probably necessary for the arrangements for crossing the Kosi which are not provided for in the above figures.

### REVENUE.

6. The revenue transactions of the Tirhoot State Railway for the last two official years and the Revised Six-months' Estimate for the current year are as follows :—

#### TIRHOOT STATE RAILWAY.

*Receipts and Working Expenses from 1885-86 to 1887-88.*

YEARS.	Receipts.	Working Expenses.	Net Receipts.	REMARKS.
	₹	₹	₹	Open mileage at Beginning of year. End
Actuals—				
1885-86 : : : : :	12,80,252	9,15,594	3,64,674	225½
1886-87 : : : : :	15,99,212	9,85,927	6,14,385	225½
Revised Estimate—				
1887-88 . . . . .	18,00,000	10,25,000	7,75,000	247½

7. While it will be observed that the revenue has been increasing rapidly, the increase in expenditure has been relatively small.

8. The Net Revenue for the current year is now placed at R7,75,000, and with the additional sections about to be opened, a still further improvement may be expected before long. For 1888-89, I think the estimated Net Revenue may be placed at 8 lakhs.

9. The total interest on the Capital cost of this section of the Railway will be about R8,40,000, and it may well be assumed that this will be covered in 1889-90. Indeed, it seems probable that the Net Revenue of this line in 1889-90 will amount to R9,00,000. With a Net Revenue of 8 lakhs the Company will receive under (d),

11,20,000 net earnings.  
5,40,000 interest.

5) 2,80,000 surplus.

58,000 one-fifth ditto.

1st, R40,000 per annum, and if the Net Revenue reaches 9 lakhs, R45,000 per annum. Assuming the total interest charges to be R8,40,000, it will be more advantageous for the Company to take 5 per cent. of the net earnings, instead of one fifth of the surplus under (d) 4th, until the net earnings of the line amount to over R11,20,000. With net earnings of R11,20,000 the Company would receive R56,000 under (d) 1st, or the same amount under (d) 4th.

10. The raising of debentures guaranteed by the Secretary of State will probably involve the State in an annual charge of, say, ½ per cent more than the Secretary of State would have to pay if he raised the money himself. So far as this section is concerned, the amount of loss will be light and may be placed at ½ per cent. on R5,67,000, or R1,417, or say, R1,500 per annum.

11. The probable financial result to the State during the year 1898-89 of making the Tirhoot State Railway over to the Company on the terms proposed will be the amount by which the working expenses of this Railway can be reduced by being worked by a combined staff for the two Railways, less the amount paid to the Company for supervision and an additional interest charge of about R1,500. This estimate is based on the supposition that the surplus staff of the Tirhoot State Railway can be fully utilized elsewhere. The salaries and allowances of any of the surplus staff that cannot be utilized elsewhere, will of course reduce the estimated savings.

12. I have been carefully over the estimates and accounts of the Bengal and North-Western and Tirhoot Railways with Mr. Izat. Judging from the standard in force on the Bengal and North-Western Railway and the probable work entailed in working the Tirhoot State Railway, Mr. Izat considers that a large saving could be effected in the present establishment charges of the Tirhoot State Railway if this line is made over to, and worked by, the Bengal and North-Western Railway Company.

He considers that the services of the following officers would not be needed :—

Manager . . . . .	Salary R1,800 a month.
Examiner . . . . .	" " 950 "
Storekeeper . . . . .	" " 650 "
Medical Officer . . . . .	" " 650 "
Locomotive Superintendent . . . . .	" " 850 "
Traffic Superintendent . . . . .	" " 650 "
Commander and Chief Engineer . . . . .	" " 400 "
Two Engineers . . . . .	" " 420 "

and that the following saving could be effected :—

	R	R
Manager . . . . .	1,800	
Office of ditto . . . . .	600	
	<hr/>	2,400
Examiner of Accounts . . . . .	450	
Office of ditto . . . . .	2,000	
	<hr/>	2,450
Stores Department . . . . .	...	500
Medical Department . . . . .	...	400
Locomotive Department . . . . .	400	
Office of ditto . . . . .	500	
	<hr/>	900
Traffic Department . . . . .	600	
Office of ditto . . . . .	1,000	
	<hr/>	1,600
Steam-boat Service . . . . .	...	300
	<hr/>	
Total saving per mensem . . . . .	...	8,550
		<hr/>

This saving provides for Assistants being employed in the Accounts, Stores, Locomotive and Traffic Departments in lieu of the superior officers now employed ; for an allowance being given to the Civil Surgeon, Muzaffarpore, to look after the Railway staff, and to the employment of men on reduced salaries in lieu of the officers now employed on the steamers.

13. The greater portion, if not the whole of the economies proposed, appear feasible, and I think that these may be generally accepted as fairly correct. The establishments on the Tirhoot State Railway run much higher, both in the number and pay, than those employed on like duties on the Bengal and North-Western

Railway. On this point I may cite the following figures as an example. These relate to the Accounts for the half-year ended June 1887 :—

	Bengal and North- Western Railway.	Tirhoot State Railway.
Open mileage . . . . .	376	247½
Train mileage . . . . .	3,69,125	3,05,693
Cost of Station staff . . . . .	₹ 29,964	58,665
" Train " . . . . .	12,469	15,163

I find that the staff employed in the Traffic Department of the two Railways is as under :—

Traffic Superintendent . . . . .	1	400	1	650
Assistant Traffic Superintendent . . . . .	...	...	1	370
Inspectors . . . . .	2	350	2	440
Traffic Candidate . . . . .	1	150	...	...
	4	900	4	1,460
Clerks . . . . .	19	720	32	1,500
Servants . . . . .	12	60	17	99
Total . . . . .	35	1,680	53	3,059

While it appears clear that a considerable saving can be effected by amalgamating the two lines, I believe also that a large saving could be effected, without loss of efficiency, with the present management and the existing staff of superior officers. What saving can be effected is difficult to estimate ; but for the sake of argument, I will assume that it is possible to effect a saving of ₹2,000 a month in office establishment.

14. I have taken no account of the saving that could be effected if the present officers of the Tirhoot State Railway were replaced by officers on pay more commensurate to the services they have to perform, as I know that at present it is almost, if not absolutely, impossible to find work for these officers elsewhere.

15. Mr. Izat further believes that a saving of ₹4,000 a month in the cost of the Station staff and ₹500 a month in the cost of the Train staff could be effected. With this reduction the cost of the Station and Train staff of the two Railways for the half-year ended June 1887 would stand as follows :—

	Bengal and North-Western Railway.	Tirhoot State Railway.
	₹	₹
Station staff . . . . .	29,964	34,665
Train staff . . . . .	12,469	12,163

Unless the staff of the Bengal and North-Western Railway is not efficient or is underpaid, this reduction should be feasible whether the amalgamation is made or not.

16. With a view of clearing up the matter, I will assume that it is possible to effect economies to the following extent without any change in the present management :—

	₹
Office staff . . . . .	2,000
Station staff . . . . .	4,000
Train staff . . . . .	500
Total . . . . .	6,500 per mensem,

or R78,000 per annum. Applying these figures to the present estimate for the current year, the transaction could become—

	R
Gross Revenue . . . . .	18,00,000
„ Expenditure . . . . .	9,47,000
	<hr/>
Net Revenue . . . . .	8,53,000
	<hr/>

17. The total cost of establishment on the two Railways for the half-year ended June 1887 were—

	R
Bengal and North-Western Railway . . . . .	1,89,000
Tirhoot State Railway . . . . .	1,32,000
	<hr/>
Total . . . . .	3,21,000
	<hr/>

Deducting from this the assumed saving on Tirhoot State Railway establishments of R2,000 a month and Mr. Izat's estimated additional saving of R6,550 a month, or R8,550 a month (see para. 12 above), or for the six months R51,300, the total establishment charges for the half-year would be reduced to R2,69,700,—say, R2,70,000. These charges distributed in accordance with open mileage would be allotted thus :—

	R
Bengal and North-Western Railway . . . . .	1,58,000
Tirhoot State Railway . . . . .	1,12,000
	<hr/>
Total . . . . .	2,70,000
	<hr/>

18. This would lead to a reduction of R20,000 a half-year, or R40,000 a year in the establishment charges of the Tirhoot State Railway. Adding to this the reduction considered possible in the Station and Train staff of R4,500 a month, or R54,000 per annum, we have a total reduction in charges of R94,000 per annum, and the figures for the Railway would stand at—

	R
Gross Revenue . . . . .	18,00,000
„ Expenditure . . . . .	9,31,000
	<hr/>
Net Revenue . . . . .	8,69,000
	<hr/>

19. Under the proposed Agreement we should, however, have to pay the Company 5 per cent. of the net revenue for supervision, or R13,450, and consequently the Government account would stand at—

	R
Gross Revenue . . . . .	18,00,000
„ Expenditure . . . . .	9,74,450
	<hr/>
Net Revenue . . . . .	8,25,550

or R27,450 less than the sum Government may expect to realise if it retains the Railway in its own hands.

20. If it should only be found possible to remove the Manager and the Examiner, the saving on working the Railway with a combined staff would be

reduced from R8,550 to R6,350. The saving under these circumstances would be reduced by the following amounts :—

	R
Stores Department . . . . .	500
Medical Department . . . . .	400
Locomotive Department . . . . .	400
Traffic Department . . . . .	600
Steam-boat service . . . . .	300
	<hr/>
	2,200

being the difference of pay of the officers proposed to be removed and those employed in their stead. With this reduced economy the establishment charges of the two Railways for six months would be reduced from R3,21,000 by R38,100 to R2,82,900, say R2,83,000. This amount would be apportioned as under :—

	R
Bengal and North-Western Railway . . . . .	1,65,500
Tirhoot State Railway . . . . .	1,17,500
	<hr/>
Total . . . . .	2,83,000

21. This would lead to a reduction (*vide* para. 17) of R14,500 per half-year, or R29,000 a year in the establishment charges of the Tirhoot State Railway. Adding this to the possible reduction in the Station and Train staff of R54,000 a year, we have a total reduction in expenditure of R83,000 a year, and the Railway figures would then stand as follows :—

	R
Gross Revenue . . . . .	18,00,000
„ Expenditure . . . . .	9,42,000
	<hr/>
Net Revenue . . . . .	8,58,000

22. Of the net Revenue thus arrived at, 5 per cent. or R42,900 would be payable to the Company for supervision, and the Government account would show—

	R
Gross Revenue . . . . .	18,00,000
„ Expenditure . . . . .	9,84,900
	<hr/>
Net Revenue . . . . .	8,15,100

or R37,900 per annum less than the Government may expect to realize from working the line itself.

#### Summary.

23. The foregoing investigations may be thus summarised :—

- I. For a gross Revenue of R18,00,000 the line is now being worked for about R10,25,000, or 57 per cent. of gross earnings (*vide* para. 6).
- II. If certain economies are carried out, the Railway can probably be worked by its present management for R9,47,000, or 52.6 per cent. of gross earnings (*vide* para. 16). If the surplus superior staff not needed on the Railway could be removed, a still further reduction could be effected.
- III. If the whole of the surplus superior officers are removed and the line is worked by the Bengal and North-Western Railway Company, Mr. Izat considers that the expenses can be reduced to R9,74,450 or 54.1 per cent. of gross earnings, after allowing the Company 5 per cent. of the net earnings for supervision (*vide* para. 19).

- IV. If no charge is made for supervision, under the same conditions as in III, the expenses can be reduced to R9,31,000, or 51·7 per cent. of gross earnings (*vide* para. 18).
- V. If the Manager and Examiner only are removed and the line is worked by the Bengal and North-Western Railway Company, Mr. Izat considers that the expenses can be reduced to R9,84,900, or 54·7 per cent. of gross earnings, after allowing 5 per cent. of the net earnings to the Company for supervision (*vide* para. 22).
- VI. Under the same conditions as in V, but excluding the supervision charges, the line could be worked for R9,42,000 or 52·3 per cent. of gross earnings (*vide* para. 21).

*Effect of proposals on Bengal and North-Western Railway,*

Under III, the Bengal and North-Western Railway Company would benefit to the extent of R1,89,000, minus R1,58,000, or by R31,000 per half-year, or by R62,000 per annum by reduction of working expenses; plus R43,450 by payment of 5 per cent. of net earnings for supervision, or by R1,05,450 per annum.

Under IV, by a reduction of R62,000 per annum in working expenses.

Under V, by a reduction in working expenses of R1,89,000, minus R1,65,500, or R23,500 per half-year, or R47,000 per annum; plus R42,900 for supervision, or by R89,900.

Under VI, by a reduction of R47,000 per annum in working expenses.

24. By making over the Tirhoot State Railway to the Company on the terms now proposed, the State will suffer a loss of about  $\frac{1}{2}$  per cent. on all further Capital outlay. This additional charge, under present circumstances, so far as the sections of Railway now dealt with are concerned, is estimated at R1,500 per annum.

25. An investigation of the proposed term of working the Tirhoot State Railway by the Bengal and North-Western Railway Company indicates pretty clearly that the latter Railway will benefit from any such arrangement very considerably without the proposed payment of 5 per cent. of net earnings for supervision.

Irrespective of this charge for supervision, under the proposed Agreement, the Tirhoot State Railway will bear its fair proportion of all such outlay as is incurred by the Bengal and North-Western Railway Company for direction and supervision. Under these circumstances, to make a further payment on this account would appear to be gratuitous and uncalled for.

I am, consequently, of opinion that in considering the terms of any Agreement for working the Railway, no separate charge for supervision should be made.

26 If the provision for supervision is struck out, the terms that have to be considered are practically diminished to those under conditions IV and VI above. As it seems possible that Government may be able to remove the Manager and the Examiner, while there will probably be considerable difficulty in finding employment for the other officers, the only condition that needs further investigation is VI.

27. Looking to the terms of the contract under which, if the State determine to purchase this line hereafter, it is bound to pay twenty-five times the average net earnings of the five years previous to purchase, it appears essential that we should avoid any undue enhancement of the price of the Railway by allowing the Company to make any large amount out of a Working Agreement in connection with the Tirhoot State Railway, without taking due precautions.

28. One way of meeting this difficulty would be to limit the purchase price of the line to, say, 10 per cent. premium. This is about 15 per cent. in excess of the present value of the shares. Or the case might be met by selling the working lease of the Tirhoot State Railway to the Company for a fixed sum.

A third method would be to fix the Working Agreement on a basis which would leave the Company after it obtained the Agreement in about the same position as



it is at present. This would leave the Company to make its profit out of future expansion of traffic.

29. It must not be overlooked that each lakh of rupees added to the Company's average net revenue increases the purchase price of the Railway by 25 lakhs of rupees.

30. The conditions under head VI, even supposing there is no further development of traffic, will give the Company an annuity of Rs47,000 per annum for nearly 25 years, and will then involve the State in an additional charge of Rs11,75,000 in purchasing the line, if this is then determined on. If the purchase is not made, the annuity will continue. If we are to work our Railways on commercial principles, this benefit, in the interests of the Indian tax-payers, should not be given for nothing.

It will be noticed that the net return to the State from working the line by the agency of the Bengal and North-Western Railway Company, under condition VI, is nearly the same as under condition II, where the line is worked by the State, save that under condition VI the State has to find employment elsewhere for a Manager on Rs1,800; but as this officer will become surplus over present wants, Rs1,800  $\times$  12 or Rs21,600 must be added to the working expenses of the Railway under condition VI, to show the true cost of this condition to the State. This will raise the cost to the State of condition VI to Rs9,63,600 as compared with Rs9,17,000 under condition II—a loss of Rs16,600 per annum. The abolition of the Examiner's appointment may also lead to some loss, but this will not be of long duration and need hardly be taken into account.

31. To leave the Company in about the same position as they are at present, and to save Government from the loss it will eventually have to meet if it purchases the Railway, a sum of Rs47,000 must be deducted from the amount payable to the Company under condition VI, which, as already said, appears to be the only condition investigated under which the Railway can be made over to the Company at present, so long as employment cannot be found for the Government surplus staff. If this Rs47,000 be deducted from the gross expenditure as arrived at under condition VI, or Rs9,42,000, the expenses chargeable to the Railway will amount to Rs8,95,000 or 49·7 per cent. This allows for expansion of traffic, but such expansion may reasonably be expected at no distant date.

32. Under the circumstances of the case and with a view of guarding the interest of the State, while the Company is at the same time afforded a fair opportunity of getting a reasonable return out of the Railway, it appears, if it is decided that the Tirhoot State Railway should be made over to the Company for working purposes, that the best course to follow will be to lease the Railway for a fixed percentage of the gross earnings. This would be a simpler and more satisfactory arrangement than that which would follow under the proposal of the Company. The investigations made above tend to show that a lease on the basis of the Company working the Railway for 50 per cent of the gross earnings would be fair to both parties. This percentage would afford the Company a fair chance of realising a profit from the working of the line; while it is clear that if the Railway was made over to the Company on easier terms, the interests of the Indian tax-payer would be sacrificed for the benefit of the shareholders of the Company. The Railway has a commercial value and should not be parted with for less than this value.

33. Under the working terms now suggested, mutual arrangements will have to be made regarding further Capital outlay. Probably something like the following will meet the case.

The State to find the money needed for completing the works of the Railway now contemplated according to an agreed-on Schedule. This Schedule to be based on the requirements of the present traffic.

All further outlay on the line made over in addition to that included in the Schedule to be found by the Company.

If any extensions are hereafter agreed upon, the State should find the interest on the Capital during construction ; but after the date of opening to traffic, the interest should be met by the Company.

34. In the calculations made in this note, no account has been taken of the charges for Leave and Pension allowances of the staff employed on the Tirhoot State Railway. These charges at present amount to about Rs30,000 a year, and will of course gradually diminish as the Pensionable Establishment is reduced.

I think, on the whole, it will be better to leave these allowances altogether out of account in the event of the Tirhoot State Railway being made over to the Bengal and North-Western Railway Company to work. The usual percentage for Leave and Pension allowances has hitherto been treated as an indirect charge against the Railway, while the Railway has borne all the Leave allowances payable in India as a direct charge.

35. If the Tirhoot State Railway is made over to the Bengal and North-Western Railway Company, I would suggest that the Bengal and North-Western Railway Company should pay all the Leave allowances of Government officers and employes they take over, in the same way as they have to meet the Leave allowances of their own officers and employes, but that the liability for the pension of pensionable servants should remain, as at present, without any percentage being levied to meet the same.

36. If the line is made over, it will be necessary for Government to exercise some control over the affairs of the Company. How far this should extend can best be considered when the terms of the Agreement have been arrived at.

37. Before concluding any Agreement with the Bengal and North-Western Railway Company, I think it would be well to consult the Government of Bengal on the present proposals, and the natural alternative thereto, *viz.*—

The amalgamation of this Railway with the Eastern Bengal State Railway System as soon as the Tirhoot State Railway and the Assam-Bihar State Railway are completed to the banks of the Kosi and connected by some means across that river.

The distance from Calcutta to the Kosi is only about 400 miles, and this distance would not interfere with the successful working of the Tirhoot State Railway by the Eastern Bengal State Railway staff. There is little doubt, I fancy, that this would be the most economical procedure to adopt in the interest of the State, and even the Eastern Bengal State Railway System thus enlarged would not be an excessive charge for one management.

38. I have not taken up the investigation of the results of making over the lines east of the Kosi to the Bengal and North-Western Railway Company, as I believe it has been decided that this is not desirable, and that the construction of the permanent line from Kaunia to Dhubri may stand over for the present.

21st February 1888.

A. J. F.

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[ENCLOSURE NO. 3 OF RAILWAY DESPATCH NO. 91 OF 1888.]

No. 196 T. F., dated the 5th July 1888.

From—C. MACAULAY, Esq., C.I.E., Secy. to the Govt. of Bengal, Finl. Dept.,  
To—The Secretary to the Government of India, Public Works Department.

With reference to demi-official correspondence which has passed between His Honour the Lieutenant-Governor and the Honourable Member in charge of the Public Works Department on the subject of the proposal of the Bengal and North-Western Railway Company to take over the Tirhoot State Railway, I am desired to submit the following observations.

2. The Company's proposals and the anticipations of possible savings in the working of the Tirhoot line were examined in Colonel Filgate's Note of 21st Feb-

rury, and this was unofficially communicated to the Lieutenant-Governor for an expression of his opinion. A statement of His Honour's views was forwarded to Sir Charles Elliott in the form of an official note, dated 19th March, of which a copy is annexed. In reply Sir Charles Elliott, in his demi-official letter of 14th May, asked Sir Stuart Bayley for his opinion regarding the financial, as distinct from the administrative, aspect of the scheme for surrendering the line to the Bengal and North-Western Railway Company, and suggested, as fair both to this Government and to the Company, a sliding scale, according to which it was proposed to fix the proportion of working expenses to gross receipts. The scale was to begin with an allowance of Rs9,20,000 on a gross revenue of 18 lakhs, increasing to Rs10,82,000 on a gross revenue of 22 lakhs.

3. Before proceeding to consider this proposal, His Honour desires me to refer briefly to the question of the financial prospects of the line. The revised estimate for 1887-88 is taken, in the notes of the Government of India, at Rs18,00,000. In this Government note of 19th March it was taken at Rs18,50,000, and the preliminary statement of the Examiner shows the actual receipts as Rs18,51,000. The latest returns show an increase of Rs31,981 in the period from 1st April—23rd June 1888, compared with the period from 1st April—25th June 1888. During 1887-88 13 miles of line were opened to traffic, and it is expected that during the current year the final length of 14 miles to the Kosi river will be added. The receipts rose from Rs12,80,258 in 1885-86 with a length of 225 miles, to Rs18,51,000 in 1887-88 with a length of 247 to 259. Having regard to all the circumstances, the Lieutenant-Governor considers that the anticipation of a gross revenue rising from 20 lakhs in 1888-89 to 26 lakhs in 1891-92 is not unduly sanguine.

4. The important points for immediate consideration are, however—(1) the initial proportion of working expenses to revenue to be taken; (2) the sliding scale of proportion to be adopted.

5. With reference to the first point, I am to urge that a proportion of Rs9,20,000 to Rs18,00,000 is unduly high, and is not justified either by actual experience or by reasonable anticipation. The revised estimate for the past year is Rs10,60,000. From this, however, two important deductions must be made. The first is a sum of Rs70,000 on account of the cost of constructing a temporary line, six miles long, necessitated by the formation of a shoal at Semarai Ghât. There was also, of course, a considerable expenditure on haulage over this length, which must be taken as a fortuitous addition to the ordinary working expenses of the line. The Lieutenant-Governor considers that the whole of this sum of Rs70,000 should be deducted from the calculations of last year's expenditure. It is no doubt possible, though very improbable, that an emergency, which has never hitherto arisen since the line was first constructed, may occur during the next four years; but the charge for haulage, which has been left out of account, may fairly be placed against such a contingency. The next is a sum of Rs35,000, which represents the overcharge hitherto made by the Bengal and North-Western Railway Company under the late contract for the interchange of rolling-stock. On the basis of the new agreement, it is calculated that the Tirhoot Railway paid the Bengal and North-Western Railway this sum in 1887-88 beyond the value of the services rendered.

The savings projected by Mr. Izat are divided by Colonel Filgate into two classes—(1) those which can be effected without amalgamation, amounting to Rs78,000 per annum; (2) those which can be effected on amalgamation, amounting to Rs78,600 per annum. The total is Rs1,56,600. On the completion of the line to the Kosi during the current year, the obvious policy of this Government would be, as suggested by Colonel Filgate in paragraph 37 of his note of 21st February, to amalgamate the line with the Eastern Bengal Railway System and thus effect the second class of savings. The authorisation rolls of the Tirhoot Railway show that a great portion of the first class of savings has already been made. The Lieutenant-Governor considers that this Government is fairly entitled to claim the whole of these savings in making a

true comparison between the working expenses and the gross revenue of the past year.

		R	
	The proportion to be adopted would therefore be	10,60,000	
		R	
Minus	.	.	70,000
"	.	.	35,000
"	.	.	1,56,600
			<hr/>
		2,61,600	2,61,600
			<hr/>
			7,98,400
	say		8,00,000
on			18,51,000
	say		18,50,000

6. As regards the sliding scale to be adopted, I am to point out that it appears to have been overlooked that the 25 per cent. of the increase in revenue proposed in this Government note of 19th March was to be a sliding scale. The table in which the receipts and expenses were calculated out was intended only as an illustration of the working of this scale on the forecast of receipts, as compared with the working of the scale proposed in the notes of the Government of India. That this scale of 25 per cent. was reasonable is, the Lieutenant-Governor thinks, shown by a comparison of the figures of the years 1885-86, 1886-87, and 1887-88. The first year showed an increase of revenue of R3,19 000, with an increase of R70,000 only in expenses, although 20 miles were added to the length of the line. In 1887-88 an extraordinary expenditure of R70,000 was incurred, and the mileage was increased; yet the receipts increased by R2,51,000, with a corresponding increase of R74,000 only in the gross working expenses. Sir Steuart Bayley would urge that the scale of 25 per cent. is not only reasonable but liberal.

7. There is another point to which the Lieutenant-Governor would wish to invite attention. It can hardly be doubted that it would be an improvement if a new line were constructed from Hajipore to Somastipore, the line from the latter place to Mozufferpore being perhaps removed. It should be distinctly understood, however, that if the Tirhoot System is given over to the Bengal and North-Western Railway, any alteration to be made in its alignment must be the subject of a separate financial arrangement as regards the interests of the Local Government.

#### *Note on the effect of the proposed transfer of the Tirhoot line on Bengal Financial interests.*

The line which it is proposed to transfer is made up of—(1) the Tirhoot Railway; (2) the portion of the Assam-Bihar Railway west of the Kosi. For the first alone estimates of receipts and working expenses were taken in the contract. They were—

	R
Receipts . . . . .	14,70,000
Working Expenses . . . . .	9,20,000
	<hr/>
Net Revenue . . . . .	5,50,000

The percentage of working expenses on gross receipts was thus taken at the high figure of 62·5

The contract allowance for interest was R5,87,000 for the Tirhoot line, and it is estimated at R1,62,000 on the portion of the Assam-Bihar that is under consideration.

The proposal made is practically that we shall accept 47·7 of the gross earnings instead of Rs5,50,000, and whatever more we can make from increase of revenue and economy in administration. For the interest charges we should still be liable, and these will soon be Rs3,40,000 against our contract grant of Rs7,49,000.

The allowance which it is proposed to make to the Company is 52·3 per cent. on the gross receipts. No doubt this appears a moderate estimate compared with the rate at which our working expenses have hitherto stood. For the current year the revised gives (Rs10,60,000 on Rs18,50,000) 56·2 per cent.

Apart, however, from the reduction of Rs78,000 which Colonel Filgate considers to be immediately feasible (I am not sure if his figures provide for compensation to discharged servants, but in any case employment for some of these could be found on the new Bengal section of the Assam-Bihar and other lines), I think it is clear that the ratio which our working expenses bear to our gross receipts will steadily diminish. The following table shows the results of the last three years:—

		Receipts.	Working Expenses.	Percentage.	Miles open.
		₹	₹		
Actuals, 1885-86	...	12,80,259	9,15,594	71·4	225
„ 1886-87	...	15,99,212	9,85,827	61·6	245
Revised, 1887-88	...	18,50,000	10,60,000	56·2	247

Here we have an increase of Rs5,70,000 in the receipts, with an increase of only Rs1,45,000 (or, say, 25 per cent. on the increase in receipts) in the working expenses in two years.

It is clear that, with a rapid decrease in revenue, a rapid decrease in the percentage of expenses, and every prospect (with the opening of the new section touching the river, and the general development of the line) that the increase in revenue will continue, it would not be advisable to fix permanently any rate of allowance for working. With a considerable increase of revenue on an open line, a decrease in the cost of working must ensue. If a high rate is fixed, the more prosperous the concern becomes, the greater the profit made by those who work it, and surrendered by those who allow it.

I compare in the following table the working of the two systems as they may be forecasted for the remainder of the term of the contract—(1) the present system; (2) the proposed system. I think, looking to the increase in the past two years and to the opening of the new line, that an increase in revenue of Rs1,50,000 next year and Rs2,00,000 in each succeeding year may fairly be taken. I have taken the increase in working expenses at 25 per cent. of the increase in revenue, and I have deducted Rs78,000 as a saving which should be made at once.

	PRESENT SYSTEM				Proposed System.	Less to Provincial Government.
	Revenue	Working Expenses.	Percentage	Net Receipts.		
	₹	₹		₹	₹	₹
1888-89	20,00,000	10,20,000	51	9,80,000	9,54,000	26,000
1889-90	22,00,000	10,70,000	48·6	11,30,000	10,49,000	81,000
1890-91	24,00,000	11,20,000	46·6	12,80,000	11,45,000	1,35,000
1891-92	26,00,000	11,70,000	45	14,30,000	12,40,000	1,90,000

It will be observed that there would be a loss on this estimate in the first year of the arrangement if 52·3 were allowed, and a seriously increasing loss in later years if this fixed rate were maintained. It is pointed out in the notes that further reductions could be made, though perhaps not immediately, if the Tirhoot System were amalgamated with the Eastern-Northern Bengal System. And I venture to think that, if a saving is to be made by amalgamation, it should be made by amalgamation with our own lines.

With reference to Sir Charles Elliott's remarks on the fact that the reductions now found to be feasible on the Tirhoot line were not discovered till Mr. Izat had indicated them, I think our Railway Branch should be invited, in the light of these facts, to make a careful scrutiny of the various establishments on our other lines

*The 19th March 1888.*

C. M.

No. 118 (Railway), dated 18th October 1888.

From—The Secretary of State for India,  
To—The Government of India.

I have received Your Excellency's Railway letter No. 91, dated 17th August 1888, conveying the views of your Government on the proposals made by the Directors of the Bengal and North-Western Railway Company in their letter of 23rd August 1887 for taking over and working the Assam-Bihar system of railways.

2. In accordance with the recommendation contained in the last paragraph of your letter, I have caused the Company to be informed that I am not now disposed to enter into negotiations for the transfer of the lines in question.

3. I will not enter into a discussion on the various grounds on which you have formed your judgment on the question, but I will not conceal from Your Excellency my disappointment that you have not been able to arrive at an arrangement by which the Tirhoot railways would have been added to the Bengal and North-Western Railway and worked as one system by that agency. I cannot but think that whether there be foundation or not for the apprehension that provincial interests would have been injuriously affected by the transfer, the amalgamation of these lines under one management would have resulted in increased efficiency and economy of working.

4. I perceive that you are greatly influenced in your views by the fact that there is an excessive staff of officers in the Engineering and Revenue branches of the State Railway Department, and it is certainly to be regretted that any policy or administrative change which may in itself be considered desirable should be impeded by a temporary difficulty of this description, and I trust that your Government will be able to devise measures for bringing the number of your railway officers more into proportion with the permanent requirements of the Department.

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## 6.—Benares-Puri Railway.

No. 150 (Railway), dated 29th September 1884.

From—The Government of India,

To—The Secretary of State for India.

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*Para. 9.* One change is, however, necessary for an independent reason. In paragraph 4 (*f*) of our Despatch No. 9 B. of January 22nd, 1884, we informed Your Lordship that the Vizagapatam-Raipur project did not improve on examination, that its commercial prospects were unfavourable, and its protective value small. This view has been so amply confirmed by the surveys of last cold season that we think the line (355 miles; estimate £2,900,000) must be struck out of Schedule A.

In substitution for it the line undoubtedly possessing the best claim to insertion is the lower section of the Benares-Puri project, running from Kontera Station, on the Nagpur-Bengal Railway, through Cuttack to Puri. A reconnaissance of this was made in 1882-83, a more thorough survey in 1883-84, and the location will be completed during the current cold season. Much information regarding it has

Resolution No. 862 R. C.,  
dated September 24th, 1883.  
Resolution No. 73 R. C.,  
dated January 29th, 1884.

been published and separately supplied to Your Lordship, and the last year's reports are now under consideration. The length is put at 231 miles, and the cost at £2,523,000. This line was classified as "Pro-

ductive and Productive," but was entered in Schedule B for the reason explained in paragraph 20 of our Despatch No. 27 of January 29th, 1884. The sanction of the Nagpur-Bengal Railway now renders possible the construction of the southern section of the whole project independently of the northern.

Its value as an additional protection to Orissa from famine is unquestioned. The Engineer-in-Chief estimates that it will derive 2 per cent. from the pilgrim traffic from the north alone, to which must be added that which will be brought to it from Western and Southern India by the Nagpur-Bengal Railway, and from the North-West and Punjab by the Bilaspur-Etawah line, as also a certain goods traffic, which ought to increase, since the population is reported to have risen 31½ per cent. in the last ten years. The Patna Gya line pays from 5 to 6 per cent. chiefly from pilgrim traffic, so it may safely be assumed that this project will pay 4 per cent. within about 5 years, and will thus be technically "productive."

The substitution of this Kontera-Puri line for the Vizagapatam-Raipur will reduce the "unproductive" lines in the schedule from 10 millions to about 7½ millions, which is a material change in the direction desired by the Committee in paragraph 28 that the bulk of the lines shall be self-supporting. After providing for it, there will be a balance of about £380,000 over, which can go for the present towards the Katni-Umeria section of the "productive" Bilaspur-Etawah Railway, which Your Lordship has just sanctioned. Eventually, if the money be refunded by a Company formed to construct the whole Bilaspur-Saugor Railway, it can be applied to some other short "productive" line in Schedule B.

Despatches Nos. 99 and  
109 of June 27th and July  
4th, 1884.

No. 158 (Railway), dated 19th August 1887.

From—The Government of India,

To—The Secretary of State for India.

In reply to Your Lordship's Despatch No. 31, Railway, dated 17th March last, and previous communications, on the subject of a line of railway between Benares

and Puri, we have the honour to forward copies of our Resolution in the Public Works Department, No. 793, dated the 12th August 1887, giving particulars of the entire project.

2. Your Lordship will observe that it has practically resolved itself into two portions: the one providing for the development of Chhatis-Nagpur and aiding the coal-supply of Upper India; the other securing the famine protection of Orissa and the opening out of the portions of the Central Provinces and Bengal traversed by the line, but both possessing the object and common interest of facilitating transit of pilgrims to Puri. The two portions become, in fact, separate railways linked by a section of the Bengal-Nagpur Railway now under construction and by a common interest, but free to be constructed by either one and the same or two distinct agencies.

3. The northern of these, or Chutia-Nagpur Railway, will undoubtedly serve important objects in the development of a very large portion of Bengal; but, in view of the other demands upon our finances for famine and frontier railways, we consider that it must remain in the category of lines to be left to private enterprise, with only such aid as is comprised in what are known as "Bengal and North-Western terms," or Schedule B, in which it was classed in our Financial Despatches No. 29 of 23rd January 1883 and No. 27 of 25th January 1884.

4. The Southern, or Panchpara-Puri, Railway stands on a different footing. By paragraph 9 of our Despatch No. 150 (Railway), of 29th September 1884, this project (but starting from Kanera instead of Panchpara) was classed in Schedule A in consideration of its importance as a projection to Orissa from famine; and it has subsequently held its place in the list of uncommenced Protective Railways in our various forecasts and communications to Your Lordship, ending with our Financial Despatch No. 47 of 22nd February last.

No. 799 (Railway), dated 12th August 1867.

**RESOLUTION**—By the Government of India, Public Works Department.

READ the following papers—

Resolution of the Government of India, No. 862 (Ry. Constn.), dated 24th Sept. 1883.  
Ditto No. 73 (do.) „ 24th Jan. 1884.

**RESOLUTION.**—The desirability of utilising the Palamow coal-field for the supply of the railways to the north-west of Moghalsarai has been for many years recognised, and surveys with this object were made between that field and Baroon, the head of the Sone Canal system, in the year 1876-77. In the course of the investigation regarding railway construction throughout India, which took place in 1882, however, it became evident that a larger project was required, which would afford an outlet to the east, as well as the west, for the mineral and agricultural produce of the large province of Chutia-Nagpur, and also that such a project might with the intervention of the contemplated Nagpur-Sitarampur Railway, be extended to Cuttack and Puri, so as to aid by railway transit the vast number of pilgrims who annually visit the latter place, and to afford to the province of Orissa, by direct access from the food-supply of Chhattisgarh, an effective protection against famine. The substantial objects of this project have also been well described as (1) to provide a quick and easy means of travelling for the army of pilgrims who visit the shrines of Benares, Gya, and Puri; (2) to open out the resources of large and important tracts of country now almost cut off from communication with the rest of India, to supply them with food if scarcity prevails, or to carry it to other districts if a surplus is available; and (3) to facilitate emigration from overcrowded districts to those which are but sparsely inhabited, yet capable of supporting a very considerable increase of population.

2. In the autumn of 1882 the Government of India consequently ordered the



commencement of a series of surveys which have been carried on up to the past year, and have embraced all the more promising alternative routes between Benares and Puri.

The result of these investigations has been to establish the fact that the project practically resolves itself into two portions: the one providing for the development of Chutia Nagpur, and aiding the coal-supply of Upper India; the other securing the famine protection of Orissa, and the opening out of the portions of the Central Provinces and Bengal traversed by the line, but both possessing the object and common interest of facilitating transit of pilgrims to Puri. The two portions become, in fact, separate railways linked by a section of the Bengal-Nagpur Railway now under construction, and by a common interest, but free to be constructed by one and the same, or by two totally distinct agencies. The principal features of each of these portions of the project will now be briefly described.

### (1)—CHUTIA-NAGPUR RAILWAY.

3. *Moghalsarai to Sukhua* (Palamow coal-fields)—147½ miles.—The original project for opening out these coal-fields started from Meral, and proceeded *via* Bhikhee Chutterpore, Sultanee, Maharajgunj, and Kutumbah to Baroon on the River Sone, which is at the head of the Patna Canal, and opposite Dehree, whence starts the Buxar Canal. A western route to Baroon, *via* Kunda Khas, Chutterpore, Burdag, and Nubeennuggur, as also sundry minor variations of both routes, were examined and condemned. This route, however, was deemed unsuitable for the larger scheme originated in 1882, on account both of the heavy cost of crossing the Sone in the locality of Baroon, and of the expediency of opening out the country farther west, if possible. Reconnaissances made in the spring of 1883 resulted in the selection of a line running from Moghalsarai *via* the Kaimur plateau and Ghagga river to the Sone at Urgurh, and thence, after crossing the river at Hardi, to Chapparbar, Gurwa, and Daltongunj. In the following season, a preferable route was found over the Vindhya plateau, passing east of Bijaygurh to a crossing of the Sone at Patcha, but the latter crossing led to the proposal of an alternative which, after running along the banks of the Sone to Tilotu, should surmount the narrow hills about 4 miles west of Sasseram and then go direct to Moghalsarai. The Government of the North-Western Provinces and Oudh, while recognising that the former would open out an undeveloped locality, held that the latter must be deemed preferable, since it will be much cheaper, it would traverse a richer tract of country, and its far better gradients would facilitate the cheap transit of coal. In this conclusion the Government of India concurred, and the section from Moghalsarai has been located and estimated accordingly to Sukhua, a place close to Meral, in the centre of the coal-field, whence the branch line to Gaya will take off.

A suggestion has been made that the line might be shortened greatly by proceeding direct from the coal-field to the Sone, and facing the difficulties of a large bridge there, to the cost of which the saving by less distance and avoiding a bridge over the Koel would be a material set-off. This suggestion might be investigated whenever the railway was taken in hand, but there would probably be found a material drawback in the loss of traffic from Gurwa and the country to the south of it.

4. *Sukhua to Rud*—50 miles.—This section presents no very remarkable features, being partly easy and partly through hilly and broken country with gradients of 1 in 100. The location runs for about 15 miles through the Aurunga coal-field.

5. *Rud to Purulis*—110½ miles, with branch, 50 miles long, from mile 275½ (near Jhalda Station) to Chandel.

The question of which route from the locality of Rud in the direction of Cuttack would best accommodate the various interests involved has been found to be the most complicated of any which have arisen.

In 1862 and 1883 it was understood to be necessary to traverse the plateau of

Ranchi in order to develop it. The best information then obtainable showed that a line running directly southwards to the locality of Sudi or Lainpurā, on the Bengal-Nagpur Railway, would pass through difficult mountainous country, very sparsely inhabited. A route in a more south-easterly direction was consequently deemed necessary. In the seasons of 1883 and 1884 several lines were examined for ascending the plateau, that by the Mahlan Ghāt being eventually selected. After crossing the plateau, unsuccessful attempts were made to descend direct upon the locality of Chakardarpur and Chaibasa, by the Ghāts in the direction of Bandgam, and eventually a line by Pirihati and Aruki to Chandel, a station much farther north on the Bengal-Nagpur Railway, was alone found to be suitable.

In 1884, however, an opinion which had originally been offered in 1882 by Mr. H. H. Risley, B.C.S., that the plateau of Ranchi could be as effectively and more cheaply served by a railway passing along its northern base through the valley of the Damuda than by one surmounting the plateau itself, was exhaustively discussed, with the result that the alternative line through the valley was surveyed in 1884-85, and is now recognised by both the Government of Bengal and the Government of India as the more suitable of the two. This valley line traverses the Kurumpara coal-field, and also is expected to receive traffic from parts of the Hazaribagh district. At the same time the importance and capacity for development of the Chutia-Nagpur traffic has brought into prominence the necessity that the Damuda Valley line should leave the Chandel route near Jhalda Station, and join the Bengal-Nagpur Railway at Purulia, instead of at Chandel, so as to afford the nearest transit to Calcutta. This will shorten the line by  $16\frac{1}{2}$  miles, in the first instance, but pilgrims from Benares to Puri will thereby have to make a detour of about 15 miles. This may eventually be avoided, if their numbers should hereafter develop sufficiently to warrant the construction, as a chord alternative, of the portion of the Chandel route (50 miles long), which will thus in the first instance be discarded.

6. *Gaya Branch*.—80 miles.—A connection between Gaya and the locality of Daltongunj has been from the first accepted as an indispensable accessory to the main project, because of the goods traffic which may reasonably be expected, and also of the pilgrims who would pass on from Gaya to Puri in the course of the normal round of sacred places to be visited. Three routes have at various times been examined,—*viz.*, an easterly one from Tori by Chutra, another to the west by Chuttervoore, and an intermediate one by Manatu, the valley of the Mohur and Sberghati. The last of these has been approved.

7. *Total cost*.—The cost of the Chutia-Nagpur Railway\* has been estimated as follows :—

	Miles.	Direct charges. Lakhs.	Indirect, including exchange at 1s. 6d.	TOTAL.
Section I Moghalsarai—Sukhua . . . . .	147 $\frac{1}{2}$	170	14 $\frac{1}{2}$	194 $\frac{1}{2}$
„ II Sukhua—Rud . . . . .	50	46 $\frac{1}{2}$	4 $\frac{1}{2}$	51 $\frac{1}{2}$
„ IIIa Rud—Jhalda . . . . .	77 $\frac{1}{2}$	83 $\frac{1}{2}$	6 $\frac{1}{2}$	90
„ IIIb Jhalda—Purulia . . . . .	33	32 $\frac{1}{2}$	2 $\frac{1}{2}$	35
TOTAL MAIN LINE . . . . .	308	332 $\frac{1}{2}$	29 $\frac{1}{2}$	360 $\frac{1}{2}$
Gaya Branch . . . . .	80	69	6	75
GRAND TOTAL . . . . .	388	401 $\frac{1}{2}$	34 $\frac{1}{2}$	435 $\frac{1}{2}$

\* The Jhalda-Chandel Branch, 44 $\frac{1}{2}$  miles long, estimated at 58 $\frac{1}{2}$  lakhs, is not added, as the probability of its being required appears to be remote.

The estimates of the line from Moghalsarai to Chandel have been examined by Mr. Molesworth, the Consulting Engineer to the Government of India, with the result that while some items are increased or reduced, the total is increased by only about a lakh of rupees. His note is appended.

8. *Probable traffic*.—It is impossible to present any definite and reliable estimates on this subject in respect of a large tract of country which at present is to a great extent landlocked, unable to export except along country roads and paths, by means of carts and pack-bullocks, and for the most part devoid of effective stimulus to production. Various estimates of produce and returns will be found among the papers appended to this Resolution; but while they appear for the most part to have been framed with extreme caution, it is impossible to predicate to what extent, if at all, they are likely to be exceeded, and any attempt to do so might only prove misleading. The Government of India are unable to say more than that the coal and other mineral resources of Chutia-Nagpur have been described in the geological writings of Dr. Ball, Dr. Oldham, Mr. Hughes, and others, as also in recent articles in the *Indian Engineer*; that the trade has been analysed, with much care and local knowledge, by Mr. H. H. Risley, of the Bengal Civil Service, whose note is appended; and that the pilgrim traffic is an important factor, the extent or expansion of which it is equally difficult to ascertain and to foresee.

## (2)—PANCHPABA-PURI RAILWAY.

9. *Panchpara to Naraj*—170 miles.—For the upper portion of this section various lines have been surveyed, the result being that it is found to be on the whole desirable to take the line close to the town of Sambalpur. Running thence to the southward, a route passing through Gopalprasad in the centre of the Talchir coal-field, and Denakal, the most considerable town in those parts, has been preferred to a more westerly one *viâ* Angul. This route will be convenient for the Bamra State, which is reported to be “rich in timber and iron, and capable of great development.”

10. *Naraj to Puri*—52 miles.—Naraj has been selected as the point for crossing the Mahanadi, because the river here is suitable for either a ferry or a bridge of 3,250 running feet, and the continuation to Puri presents no difficulties. At Cuttack, on the contrary, the bridging of the Mahanadi, which is a mile and a half wide, is practically out of the question, and moreover, supposing the town had been reached, there would remain another channel to the south, called the Katjori, which would need a bridge of 3,000 feet, or nearly equal to the one sufficing at Naraj. At Naraj, a ferry might be adopted in the first instance, leaving the bridge, which is estimated at about 22½ (or 33) lakhs, to follow whenever the traffic was found to justify it.

11. *Cuttack Branch*.—It is by no means certain that any further facilities are needed for the town of Cuttack than those which will be afforded by the main line passing Naraj, within a few miles of it. But should such be hereafter demanded, a branch line might be made from that line either on the north of the Mahanadi, to opposite the town, or on the south to the southern side of the Katjori, a ferry in either case completing the communication. The Katjori ferry, however, would hardly be workable during the rains. The distance in the former case would be 8½ miles, and in the latter 6 miles; the cost in either about one lakh per mile. Mr. Molesworth, the Consulting Engineer to the Government of India, has, however, suggested, in a note which is appended, that the line between Naraj and Puri might be taken direct instead of *viâ* Khurda, by which improved gradients would be obtained, distance saved, and possibly a separate branch to Cuttack avoided altogether. The question depends mainly upon the exigencies of local traffic, which would be very large, and needs further investigation in communication with the local authorities.

12. *Keonjhar alternative.*—An account of the Panchpara-Naraj project would be incomplete without some notice of the alternative route *via* Keonjhar originally investigated. This route, starting from Kantera (on the Bengal-Nagpur Railway) which is in the vicinity of Chakardarjur, would obviously have been very direct, if a suitable line across the Ranchi plateau could have been brought to the same locality, as at one time anticipated (*supra*, paragraph 5), and the Keonjhar and Mohurbunj tract, which would traverse, was believed to be fertile and known to have been more populous in former days. The reconnaissances of 1884 and 1895, however, showed that the engineering difficulties were far more formidable, but the capabilities of the country less than had been anticipated. The ascent and descent of the plateau involved expensive work; there was much difficult country and several rivers, one of which—the Brahmini—required a bridge 5,400 feet in length, and costing 32½ lakhs of rupees, and the cost of working would permanently be high. The abandonment of the route thus became unavoidable. The Panchpara-Naraj route, which has been substituted for it, will involve some extra miles of journey to pilgrims from the eastward, but a corresponding gain to those who come from Western, Central, and Northern India.

13. *Total cost.*—The cost of the Panchpara-Puri Railway has been estimated as follows:—

	Miles.	Direct charges, Lakhs.	Indirect, including exchange at 1s. 6d.	TOTAL.
Section I.—Panchpara-Naraj . . .	170	144½	9½	154
„ II.—Naraj-Puri, with ferry . . .	52	56½	4½	61½
TOTAL MAIN LINE . . .	222	201	14½	215½
„ III.—Mahanadi . . . . .	...	22½	½	23½
TOTAL MAIN LINE, WITH BRIDGE . . .	222	223½	15	238½
„ IV.—Cuttack Branch, Northern alternative.	8½	7½	½	8
GRAND TOTAL . . .	230½	231	15½	246½

It has already been explained that neither the Mahanadi Bridge nor a Cuttack Branch are indispensable, and may stand over until called for by experience.

The estimates have been examined by Mr. Molesworth, whose note is appended. He would increase the main line from 201½ to 208½ lakhs, the bridge from 22½ to 33 lakhs, and the branch by a lakh. But the adoption of his suggestion, above alluded to, as to running direct to Puri and dispensing with a branch, might go far to reduce this excess.

14. *Probable traffic.*—The general remarks which have been made in paragraph 8 with respect to the Chutia-Nagpur Railway may be applied to this case also. The capabilities of an undeveloped country can be but imperfectly appraised by statistics of existing traffic. The goods traffic between Sambalpur and Cuttack appears to be by no means inconsiderable, notwithstanding the absence of roads, and will be subject to large temporary influxes whenever scarcity of food-grains may exist in Orissa, while the pilgrims are believed by the local authorities to be not fewer than 300,000 per annum. The opinions of the local authorities as to the prospects of development are unanimously favourable. That so large a number of persons should present themselves at Puri annually notwithstanding the obstacles presented by the journey, whether by land or sea, the ravages of cholera and other diseases on the

former and the risk of shipwreck (just fatally illustrated) on the latter, may well excite surprise, and justify anticipations of what the facilities of railway transit might produce.

#### GENERAL REMARKS.

15. While thus putting forward, with the general approval of the Government of India, the two distinct lines constituting the Benares-Puri Railway project, which have been described above, it is necessary to state briefly, with reference to the remarks in paragraph 5 as to the difficulties of a direct line from the Palamow coal-fields to the locality of Suadi or Laingurh on the Bengal-Nagpur Railway, that reconnaissances made in 1886 may be held to show that these are not so formidable as were supposed. Between Panchpara on the Bengal-Nagpur Railway and Sathbarwa Station near Palamow on the Chutia-Nagpur line, the distance is reported to be 178 miles, and the cost is very roughly estimated at 189 lakhs of rupees. The gradients, however, are very steep in some parts, and the population undoubtedly scanty. This route was recommended to the consideration of the Government of India by the Government of Bengal, with the suggestion that, supposing its directness were considered to give it the preference as a means of communication between Northern India and Puri, the construction of the Palamow-Gaya line might perhaps suffice for present requirements, leaving for future development the question of a connection between the coal-fields and Moghalsarai—possibly from Shergotty, with a bridge over the Sone, and through Sasseram.

After fully considering the matter, and even assuming that the Panchpara-Palamow line might prove far less expensive and more profitable than it has been shown to be, the Government of India entirely concur with the final opinion of the Hon. Sir Stuart Bayley, expressed in the Bengal Government letter No. 1108 R. of 17th May last, that by such a line, running north and south, the important object of opening out and serving the Chutia-Nagpur Province would be foregone, while the pilgrim traffic derivable from Benares and the market for coal presented in that direction would both be sacrificed. The Chutia-Nagpur Railway project, as described in this Resolution, is in complete harmony with the views of His Honour as expressed in that letter.

16. With regard to the estimates which have been put forward in paragraphs 7 and 13, it may be explained that these are in all cases the result of carefully-located surveys, accompanied by plans, sections, and detailed drawings of bridges, buildings, &c., upon a large scale, and estimates framed upon the best information available at the time. The former, however, must necessarily be considered as subject to the detailed scrutiny which would precede actual operations, and the latter, framed at different and not always very recent dates, may in many particulars not be in conformity with present rates of labour, or prices of iron and steel. Exchange has been applied at a uniform rate of 1s. 6d. Under such circumstances, the results presented cannot be deemed to be more than a general indication of probable operations and cost, and no definite responsibility on their account can attach to the Government of India.

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No. 116 (Railway), dated 3rd November 1887.

From—The Secretary of State for India,

To—The Government of India.

I have had before me in Council your Excellency's letter No. 158 (Railway), dated the 19th August last, and its enclosures, furnishing the particulars of the Benares-Puri project asked for in my Despatch No. 31 (Railway), of the 17th March.

Benares-Puri Railway  
project.

2. In the Resolution of your Government which accompanies the present letter, it is pointed out that the scheme in question consists of two distinct lines,—one, 308 miles in length (with a branch of 80 miles to Gaya), extending from Mohan-sarai to Purulia, a point on the projected Bengal-Nagpur Railway, estimated to cost 438 lakhs; the other, 222 miles in length (with a branch of 81 miles to Cuttack), starting from Panchpara on the Bengal-Nagpur line and proceeding to Puri by Sambalpur, at an estimated cost of 165 lakhs.

3. The first is one which, in view of the other demands upon your finances, you consider must be left to private enterprise, with only such aid as was given to the Bengal and North-Western Railway Company.

4. The second you consider to be on a different footing, and you would wish to undertake its construction as a protective work, in consideration of the protection against famine it would afford to Orissa.

5. With regard to the first, I agree that, for the reasons you assign, it must be left to private enterprise, but I need hardly say that I should be prepared to give my favourable consideration to any proposals of a Company who would be ready to undertake it on the terms to which you refer.

6. As to the line to Puri I do not undervalue its advantages; but the same causes which, in your opinion, make it necessary to postpone the commencement of the Northern section must also, I fear, be held to apply to the Southern. The protective lines which are now being constructed in Madras have a prior claim upon the resources of your Government, and I am, therefore, reluctantly compelled to decide that, unless it should be undertaken by a Company on the same terms as the Northern line, the project must be postponed.

7. I am glad to observe the high approval which the zeal, ability, and fortitude shown by Mr. W. H. Parker, the Engineer-in-Chief, and Captain Laughtarne, R.E., and other members of the staff employed on the surveys, has elicited from Your Excellency in Council.

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## **SECTION III.**

### **Frontier Railways.**

- 1. Sind-Pishin Railway.**
- 2. Bolan Railway.**
- 3. Amran Extension, Sind-Pishin Railway.**
- 4. Sind-Sagar Railway.**
- 5. Chenab Bridge.**
- 6. Mandalay Extension, Burma Railway.**





## FRONTIER RAILWAYS.

## 1.—Sind-Pishin Railway.

No. 50 (Railway), dated 24th April 1884.

From—The Secretary of State for India,

To—The Government of India.

I have had under my consideration in Council the question of proceeding with the extension of the Railway from Sibi to Quetta.

2. In my predecessor's Despatch of the 29th July 1880, No. 76, Railway, he expressed the opinion that "the surveys, as far as the Amran Range, may, with advantage, be completed, and that the country beyond, as far as Kandahar, may also be surveyed," but he directed that nothing further should be done towards the construction of a railway without a previous reference to Her Majesty's Government.

3. In your letter No. 26, Railway, dated the 23rd April 1881, you informed Lord Hartington that "all work on the extension to the Pishin Valley and Kandahar had ceased;" and up to the present time Sibi has remained the terminus of the line, a branch having been constructed to the foot of the Bolan Pass.

4. Circumstances have now so far altered as to have led Her Majesty's Government to reconsider the decision to suspend operations. The recent arrangement with the Khan of Kelat, which formed the subject of my Despatch in the Political Department, No. 13 of the 14th February last, has placed the British occupation of the district of Quetta on a different footing. A British garrison will now be permanently stationed at Quetta, and it is important, from a military point of view, that this advanced frontier post should be brought into railway communication with the Indus Valley line, besides the not inconsiderable commercial advantages which may be anticipated from the connection.

5. I have accordingly decided in Council that the construction of the line from Sibi to Quetta shall be resumed, and I have to request that measures may at once be taken for recommencing operations.

6. Although the direction which the line will take was generally described, and rough estimates of its cost were made in 1880, no accurate or reliable statements, especially as to the cost, have been received. I shall be glad, therefore, to be furnished, as soon as possible, with full information on these points, together with particulars as to the precise location of the line, the time which will probably be occupied in constructing it, the total cost, and the annual amount that will be expended upon it until its completion.

No. 56 (Railway), dated 6th May 1884.

From—The Government of India,

To—The Secretary of State for India.

We had the honour to receive Your Lordship's Despatch No. 11 (Political), dated the 31st January last, in which enquiry is made as to what works are in progress or contemplation on the Bolan and Harnai roads to Quetta, when it is expected that they will be finished, and what is their estimated cost.

2. Regarding the Bolan road, we propose shortly to address Your Lordship separately. We will therefore confine ourselves to the Harnai route in the present communication.

3. Your Lordship is aware, from the correspondence specified marginally, that at one time the construction of a railway by this route

Government of India tele-  
gram of 21st June 1880.  
Secretary of State's Des-  
patch No. 78 Ry. of 24th July  
1880.  
Government of India reply  
No. 26 Ry. of 23rd April 1881.

was in active progress from Nari for about 100 miles towards the Pishin plateau, and that operations entirely ceased by the Secretary of State's orders, towards the close of 1880. The progress made during the short time that the work was in hand was inconsiderable. Rails were laid to the Nari Gorge, 7 miles from Sibi,

and are still in use, but beyond that little was done except earthwork in comparatively easy localities.

4. In November 1882 our Hon'ble Colleague Mr. Hope examined the lower portion of the route, in company with the Agent of the Governor General in Biluchistan and the Director General of Railways, and in consequence of his representations we sanctioned the commencement of operations last November for the improvement of the road, on the principle that the gradients and curves should be such that the road could hereafter be converted into a railway if desired, and that the very limited funds available should be devoted to the works which were the most difficult and likely to occupy the longest time in construction.

5. In March last Mr. Hope again visited Biluchistan, in company with Colonel Stanton, our Director General of Railways, and inspected the works in progress and the entire route which had been proposed for a railway up to the Khwaja Amran Range, as also to Quetta.

6. We append a Minute drawn up by our Honourable Colleague describing his journey and the state of the works, and offering various suggestions, including a strong representation in favour of resuming the construction of the railway. From this Minute and its enclosure it will be seen that the works have been pushed on with a vigour and ability which do great credit to the Engineer-in-Chief, Colonel J. Browne, C.B., C.S.I., R.E., and the officers and troops under his command, and that the expenditure up to the end of March would be from nine to ten lakhs of rupees.

7. On the 23rd ultimo we had the honour to receive Your Lordship's telegram of the previous day, intimating that it had been decided by Your Lordship in Council that construction of the railway from Sibi to Quetta should be resumed, and requesting that measures might be taken at once for recommencing operations. We beg to express our entire concurrence in this decision.

8. We are now taking measures for as speedy a prosecution of the works as the nature of the country and the trying changes of climate will permit. We have already on the 24th ultimo requested Your Lordship by telegraph to send out the girders and permanent-way for the lowest section of the line by the commencement of next cold weather, and we beg very strongly to urge that, by distribution of the order among different makers or otherwise, punctuality in this respect may be secured. Unless this be so, and the lowest section be made passable by even temporary rails before the heat of April next compels suspension of operations, the effects upon progress higher up will be very serious, and the opening of the line may be postponed for a year.

9. By the terms of Your Lordship's telegram we are only authorized to carry the railway from Sibi round to Quetta; but we beg to invite Your Lordship's attention to paragraph 11 of the Hon'ble Mr. Hope's Minute, and to recommend strongly that we be permitted also to make the short branch, probably not more than about 10 miles, to Shebo or its vicinity. A considerable dépôt for railway workshops, staff, &c., will be indispensable at some central and convenient spot on the Pishin plateau, and we think it would be better to place it here at once than at Kassim Killa, for instance, which would probably be the alternative. We are also assured that this locality will be highly favourable for trade, and that an entrepôt

may be expected to grow up here rapidly, at which all caravans from Kandahar and other places to the north-west will terminate their journey.

*Minute by the HON'BLE T. C. HOPE on the Route from Sibi to Quetta and Pishin via the Harnai Valley, dated 10th April 1884.*

In my note, dated 21st August last, I gave an account of my visit to Sibi and examination of the chief difficulties of the lower section of the Harnai route, up to the Pishin plateau, in November 1882, and urged that no time should be lost in attacking them. I stated that, under the existing circumstances, the best way of doing so was by the commencement of a road through them,—a road, however, on such gradient, and with such curves as would be suitable for a railway, which might thus be laid rapidly on it if future need arose. I also recommended that work should be pushed on upon the lower and difficult section during the cold weather, from November 1st to March 31st, and that operations should be transferred for the remainder of the year to the cool high region where the Chupper Rift and its approaches block the upper section of the route. I likewise advocated the employment of military skilled labour as far as possible.

2. These proposals having been adopted by the Government of India, Colonel J. Browne, R.E., C.B., C.S.I., was appointed, with a suitable staff, to carry on the work as Engineer-in-Chief, under the orders of the Director General of Railways. A force as per margin

1 Regiment of Pioneers.  
5 Companies Bengal Sappers.

was placed at his disposal, to be supplemented by cooly labour. Nine lakhs of rupees were allotted for the year 1883-84, and he was instructed to devote his limited means to "all that was difficult and nothing that was easy." Towards the end of November, Mr. Molesworth, the Consulting Engineer for Railways to the Government of India, who had, during the late war, examined the entire route up to the Khwaja Amran Range of mountains, was deputed to accompany Colonel Browne over it as far as the Chupper Rift, explaining the alignment and improving it wherever possible.

3. In the middle of last month I started, with Colonel Stanton, the Director General of State Railways, on an inspection of the work, and returned on the 7th instant. We marched up the entire line of the proposed road, or railways, from the terminus of the existing railway at Nari Gorge to Killa Abdulla, visited the top of the Khojak Pass, and returned by the proposed branch to Quetta. From Quetta we reached the railway again at Pirchokie by the new road which is in progress through the Bolan Pass. It may now be useful that I should give a brief account of the project generally and of the condition in which I found the work.

4. The entire project may be said to consist of two portions,—the ghat portion (119 miles) from Nari to the Pishin plateau, near Khanai in the Gwal Valley; and the plateau portion, from near Khanai to Killa Abdulla via Gulistan (50 miles), with the branch from Kasim Killa to Quetta (20 miles). The plateau portion may be generally described as easy throughout, and a railway can be laid there with comparative cheapness and rapidity; but the ghat portion presents most formidable difficulties. No one who has not seen the natural obstacles which, whether on the Harnai or the Bolan route, intervene between the Pishin plateau and India can adequately appreciate their magnitude, or the mischief they must cause in time of war, crippling our strength before it can reach the point where it ought to be fully applied.

5. The ghat portion, again, may be roughly divided into three sections. The centre one of these (about 50 miles), from near the Spintungi tunnel to the foot of the Chupper Rift, though containing steep gradients and a good deal of heavy work, is the easiest of the three. The climate is temperate, especially about the military post of Sharigh, so that work can proceed at any time of year. A commencement

has been made in two of the more difficult places, but a good deal of the line is still in process of final location.

6. The lower section (36 miles) has been, as arranged, the seat of operations during the past season. We examined the whole of it carefully in detail. The present state of progress will be understood from a perusal of the accompanying report by Colonel Browne, dated 23rd February last, supplemented by my marginal notes of March 25th. Speaking generally, the whole of the earthwork has been completed, except part of two or three of the enormous cutting and banks, and the side slopes of cuttings throughout; the wet foundations of seven of the most difficult water piers in the six major bridges, besides two at one of the minor bridges, have been put in; one dangerous tunnel has been secured and lined throughout, and the headings and adits of the three others in the section have been completed. Colonel Browne has thus ably and fully followed the instructions he received, and has been energetically supported by the officers and troops under his command.

7. So much progress has thus been made, that the road might, in a few weeks next season, be fit for cart traffic or the laying of rails, but for the want of bridges. Of these, there are 14 important ones, requiring 46 iron girders, of which 29 must be of 150 feet span. Some few of the spaces could be got over by temporary road or rails in the river beds, but others absolutely bar a passage. In the Gundakin Duff defile, for instance, the line springs from a high cliff, across a bridge of five spans of 150 feet each, into a long tunnel, whence it emerges to cross at once another similar chasm. Moreover, the girders, the use of which is rendered obligatory by the absence of good building material, are far too heavy to be transported to their respective sites, except upon a line of rails. Until this lower section has been completed, even as a road, it will be practically impossible to make any good use of the Harnai route. Were it bridged throughout, traffic or troops could rapidly reach the uplands of the central section, and could continue their march even if the upper section of the new road were not available. Without such completion of the lower section, moreover, the cost and difficulty of all operations above will, as pointed out in the 4th paragraph of Colonel Browne's report, be enormously enhanced. I therefore strongly recommend that the whole set of girders for this section, together with 50 miles of rails and sleepers, be at once ordered from England by telegraph, to arrive at Karachi not later than the 1st November next. The cost of these, delivered at Nari, would be about £130,000.

8. The central section I have already described as comparatively easy. Work is now in active progress on some parts of it, and the Sappers, who are on their march upwards, will be detained for a short time upon heavy tasks in it until their destined work on the Chupper Rift has been worked out for them. It would be a great advantage and a material aid to the formidable operations, requiring heavy plant, at the Chupper Rift, if another 50 miles of permanent-way were now ordered for use on this section.

9. The upper section differs from the lower in characteristics. Its difficulties consist in—(1) the Chupper or Adina mountain, a mass of limestone, which some volcanic convulsion has rent vertically, so as to form the Rift, through which a river rushes; and (2) many miles of extremely undulating country, across which the cuttings, banks, and curves will be difficult and expensive. The question of whether the line should be carried through the Chupper Rift itself, by a series of cuttings, tunnels, and galleries, or whether the mountain should be pierced by a single tunnel, has been carefully considered by Colonel Stanton and Colonel Browne, and will be decided very shortly, as soon as certain surveys now in progress have been completed. Work will then commence there with the Sappers and cooly labour. The Madras Pioneers will, about the same time, reach Kutch, 18 miles above the Rift, to deal with the more difficult part of the undulating country above referred to.

10. In completing my notice of this ghat section, I should not omit to mention

that I have felt it my duty, before committing the Government to the route by the Chupper Rift, to make the fullest enquiries possible regarding others which, at one time or another, have been suggested. The chief of these is one leaving Quetta by the Harnai river, and passing by Spinkarez, Astangi, Pir Ishmael, to the right of Zargun, and down the valley to Badra, thus joining the Harnai route proper near Babeh-Kutch. This route was reconnoitred by Mr. Molesworth and Colonel Browne in December last, and the former reports that "though giving great promise of an easy line for the last 22 miles into Quetta and for the first 30 miles from Babeh-Kutch, yet for 28 miles intermediate (it) passes through a close defile of such a character as to be utterly impracticable for the purposes of a railway, even were the gradients admissible."

Another suggested route, between the valley near Sharigh and Quetta, has lately been reported impracticable by Lieutenant Moncrieff, R.E.

A third route, working by the Gwal and Boree valleys *viâ* either Katsor Smalan round to Duki and Thal, and thence to Gundakin Duff, has some warm advocates, especially on the ground that it would promote eventual railway connection between Thal and Dera Ghazi Khan. But it would add greatly to the distance from Sibi to Quetta, its engineering features are at best doubtful, and it would in part pass through localities where I understand that political complications might arise.

I discussed the whole matter with Sir Robert Sandeman, and we agreed that the Harnai route possesses advantages, political, commercial and military, to which no other can lay claim.

11. I now proceed to describe the plateau portion of the whole line. On emerging, about 4 miles short of Khanai, from the undulating country already referred to, the route lies through an open plain till it reaches Kasim Killa (14 miles), and presents no difficulties worth notice, except a fair-sized bridge over the Lora, until it reaches Quetta, 20 miles further on. The bifurcation of the main line to Killa Abdulla and the Quetta branch is, according to the existing project, to be at Kasim Killa (Bostan). An alternative point higher up the valley, nearer to Khanai, has been suggested, with the view of bringing the line closer to the new military and political station called "Pishin." This would lengthen the distance to Killa Abdulla and Pishin from Quetta, though shortening it from Sibi, and would possibly involve a considerable rise and fall. No definite opinion can be formed on the point without a thorough reconnaissance of the country, which for 10 or 12 miles hereabouts is a series of low hills and undulations. But I fear that the railway cannot under any circumstances be brought nearer to the new station than 4 or 5 miles. On emerging from these low hills the line enters a small plain enclosed on three sides by the Surkhab, the Pishin Lora, and the Kakar Lora rivers, and situated at the foot of the slopes on which the Pishin station stands. In this plain, and probably near the village of Shebo, will be found a suitable site for workshops, employés' quarters, and all the concomitants of a railway terminal *dépôt*, which it might be safer to place here than in a more advanced position. In the event of the railway being sanctioned to Quetta, though not to Killa Abdulla, I think it would be most desirable to make also the portion thus far on the road to the latter, in order to avoid expense in shifting the *dépôt* hereafter, to overcome, while we have leisure, the hilly patch of country, to serve the station of Pishin, and to afford a centre, likely soon to develop into a town, to which caravans might bring their produce to the railway.

12. Just beyond this point occurs the Lora river, which will need a good-sized bridge. Beyond it, the plain is a dead-level, without obstacle worth mentioning, to Gulistan and Killa Abdulla; but it will be the matter for consideration whether the line should go to the latter through the former or more direct.

13. In concluding this notice of the whole project, I may explain that though the making of the road will make the laying down of rails a comparatively simple

matter, that operation can never, owing to the sharp curves, necessitating careful rail-bending, with which the line abounds, be executed with anything approaching the rapidity possible on a straight and level route.

14. I may now allude to three matters which, though only germane to the subject of this note, have attracted my special notice.

*Firstly.*—There appears to be a very considerable opening for forest conservancy, or rather re-forestation, in Pishin and the Quetta valley. The hills are now for the most part entirely bare and unpromising in appearance; but solitary trees or small scattered groups of trees here and there, even in the Khojak Pass, as also the juniper forests in Ziarat and other secluded valleys, prove that the soil is not incapable of arboriculture. I am told that much denudation has taken place of late years, and specially in the Quetta valley, owing to the demand for fuel since our occupation. A thoroughly qualified and energetic forest officer might certainly effect a great deal, and I would suggest that no time be lost in appointing one. I understand that Sir Robert Sandeman would welcome the measure, and has already obtained a preliminary report on the forest capabilities of the Agency by a forest officer lent for a short time by the Bombay Government for the purpose.

*Secondly.*—Nothing but a better supply of water is wanted to render the whole of the very extensive plain of Pishin an expanse of wheat and similar cultivation. At present the greater part is waste; patches only are cultivated, as occasional scanty rain and such ducts (or karez) as can be made from the streams will permit. The Political Agent, Mr. Barnes, has various schemes for the improvement of the water-supply, and I think that it would be most desirable to depute an officer of the Irrigation Branch of the Public Works Department to report specially on the subject. It is obviously well worth our while to spare no effort to render Pishin profitable to the railway as an exporting tract in time of peace, and to our army as a source of supply in time of war.

*Thirdly.*—The search for petroleum, which Mr. Townsend, a Canadian expert, was appointed by this Department last January to conduct, is progressing most satisfactorily. He reports as of excellent quality certain oil-springs which had been indicated to him by Sir Robert Sandeman. They are situated on the Katani river, near the Maurani hill, within 30 miles of Sibi; and if they stand successfully the test of deep borings, which I hope may be begun next cold season, they will, by supplying the locomotives, contribute materially to reduce the expense of working the Indus Valley and Sind, Punjab and Delhi Railways, as also the Quetta line, whenever made, besides becoming an important addition to the general supply of India. Other springs have been found near Bagh, in the Khan of Khelat's territory, and Mr. Townsend is now examining certain localities along the Harnai route itself.

15. In preceding paragraphs I have described the progress of the Harnai road under existing arrangements, based on a grant of only about nine lakhs of rupees for the current year. I cannot conclude, however, without recording my strong sense of the insufficiency of those arrangements, in view of the fact of our occupation of Pishin and of our political position in relation to Russia and Afghanistan. In 1882, in 1883, and again on a recent occasion, I have expressed to His Excellency the Viceroy the opinion that we should take advantage of the present time of peace to push on the entire railway to Killa Abdulla and Quetta. I trust that, at least, its construction to Quetta and Shebo may be sanctioned without delay.

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No. 76 (Railway), dated 3rd July 1884.

From—The Secretary of State for India,  
To—The Government of India.

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5. In addition to the direct line from Sibi to Qutta, Your Excellency strongly

recommends that a short branch of about 10 miles from Kasim Killa to Shebo should be constructed. This latter place is described as a convenient spot for a depot for workshops, &c., which you state is indispensable, and also as favourably situated for trade.

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Dated 1st May 1885.

Telegram from—Viceroy, Simla,  
To—Secretary of State, London.

In order to relieve transport in lower part of Bolan Pass under present circumstances, we have sanctioned temporary extension of existing line from entrance of pass as far as Mach or about 52 miles, and also expedients by winding engines probably 7 miles further to summit pass, where junction with Sind-Pishin will be effected. Work under Colonel Lindsay began 20th April 1885, and being prosecuted actively. We solicit your approval.

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Dated 5th May 1885.

Telegram from—Secretary of State, London,  
To—Viceroy, Simla.

Yours 1st. Bolan Railway Works and Sind-Pishin Extension approved. Material for these and for proposed reserve stores will be supplied as soon as practicable.

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No. 175 (Railway). dated 25th October 1886.

From—The Government of India,  
To—The Secretary of State for India.

We have now the honour to report our proceedings in regard to the continuation of the Sind-Pishin Railway from Bostan to the Khwaja-Amran range of hills.

2. In Lord Kimberley's Despatch No. 76 B. of 3rd July 1884, an extension was sanctioned from Kasim Killa (otherwise Bostan) to Shebo (otherwise Saiad Hamid), and on 5th May 1885 His Lordship telegraphed his approval of our proposal, dated 1st idem, for a further extension to the foot of the Amran Range. No point at the foot of the range was then specified, because we were not at the time in a position to make a more definite recommendation pending the receipt of more accurate surveys and data than we then possessed. The direction also to some extent depended on the question of crossing the range at some future period, but it was known that Gulistan at the foot of the Gwaja Pass, and Killa Abdulla at the foot of the Khojack and Sanzal passes, had always, from the time of the discussions in 1879-80, been deemed obligatory points, to one or both of which the railway should go.

3. In the appendix to our Despatch No. 264, Finance and Commerce, dated 22nd September 1885, Rs23,90,000 for the section from Bostan to Saiad Hamid (or the Lora river) were included in the provision for the Sind-Pishin Railway, and 20 lakhs were entered separately for the extension to the Khwaja-Amran Range. These provisions were comprised in the approval conveyed in Lord Randolph Churchill's Despatch No. 367, Finance, dated 10th December 1885.

4. The needful surveys and estimates having been prepared and duly scrutinised by our Director General of Railways and by our Consulting Engineer for State Railways, we sanctioned in July 1886 an estimate amounting to Rs37,32,684, of which the usual abstract is appended, for the line from the Bostan Junction to Gulistan, a distance of 32½ miles. This line crosses the Pishin-Lora, the principal river in the Pishin Valley, at Saiad Hamid.



5. In order to provide communication with Killa Abdulla at the foot of the Khojack Pass, it was at that time proposed that a branch should pass from the Gulistan line immediately to the west of the Pishin-Lora crossing, and surveys and estimates were accordingly prepared. On further investigation, however, it has been found that by making the branch start from a point nearer the range, a very considerable saving in cost will result. We have accordingly decided to adopt this route. We have not yet received the project for this branch in detail, but our Director General of Railways reports that it will be an easy one to construct, will be about 9 miles in length, and will cost about Rs6½ lakhs in all. Of this amount the English expenditure is about Rs2 lakhs; this has been already incurred and the permanent-way material, &c., is in the country. As this connection with the Khojack Pass is still deemed by our military advisers to be of great importance, and it is desirable to utilise labour which has been collected on the Gulistan Section, as also to make the most of the time remaining before the excessive cold of the winter in that part stops field operations, we have authorised our Public Works Department to commence work on this branch as soon as the detailed plans and estimates have been received, and have been duly scrutinised and sanctioned. It will be seen that the total expenditure contemplated is not estimated to exceed the sanction of Rs43,90,000 referred to in paragraph 3 of this Despatch.

6. We trust Your Lordship will approve of our action in this matter.

7. An Index Map, showing the position of the Gulistan and Killa Abdulla branches, accompanies.

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No. 111 (Railway), dated 9th December 1886.

From—The Secretary of State for India,

To—The Government of India.

I have had before me in Council your Despatch in the Public Works Department, No. 173, Railway, of the 25th October 1886, describing the measures which you have taken for extending the Sind-Pishin Railway from Saiad Hamid to the foot of the Amran Range at Gulistan and Killa Abdulla respectively.

2. I observe that the cost of these extensions are estimated at Rs43,83,684, which is just within the estimate of Rs43,90,000 already sanctioned, and I desire to express my approval of the proceedings of your Government in the matter.

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## 2.—Bolan Railway.

Dated 1st May 1885.

Telegram from—Viceroy, Simla,

To—Secretary of State, London.

In order to relieve transport in lower part of Bolan Pass under present circumstances, we have sanctioned temporary extension of existing line from entrance of pass as far as Mach, or about 52 miles, and also expedients by winding engines probably 7 miles further to summit pass, where junction with Sind-Pishin will be effected. Work under Colonel Lindsay began 20th April 1885, and being prosecuted actively. We solicit your approval.

Dated 5th May 1885.

Telegram from—Secretary of State, London,

To—Viceroy, Simla.

Yours 1st. Bolan Railway works and Sind-Pishin Extension approved. Material for these and for proposed reserve stores will be supplied as soon as practicable.

No. 51 Railway, dated 15th March/1887.

From—The Government of India,

To—The Secretary of State for India.

Despatch from Secretary of State, No. 112, Military, dated 19th July 1885.

Despatch from Government of India, No. 264, Financial, dated 22nd September 1885.

Despatch from Secretary of State, No. 271, Military, dated 15th October 1885.

Despatch from Government of India, No. 156, Military, dated 4th October 1886, para. 7.

Despatch from Secretary of State, No. 24, Military, dated 27th January 1887, para. 3.

We have the honour, with reference to the correspondence marginally noted, to transmit, for Your Lordship's information, copies of certain documents detailed at foot, regarding the existing temporary and the contemplated permanent Bolan Railway, and the intended introduction on the latter of the "Abt System" of ascending steep inclines.

2. We would here explain that in pursuance of the recommendations contained in our Military Despatch No. 112 of the 10th July 1885, which were duly approved in the Despatch from Your Lordship's predecessor No. 271 (Military) of the 15th October 1885, Mr. F. L. O'Callaghan, C.I.E., the Engineer-in-Chief of the Bolan Railway, was directed to make a reconnaissance to ascertain the practicability of laying a permanent line of railway up the Bolan Pass.

3. In December 1885 that officer reported that between Mach and the top of the Pass near Darwaza an improved alignment over that adopted for the temporary metre-gauge track could be obtained with less difficulty than had been supposed, but that in lieu of attempting to continue the improved alignment downwards through the Bolan Valley and Kundilani Gorge, he considered that it would be preferable to take a new departure from Mach along the east side of the Lalachi plain to the Bindu Pass, where the Mushkaf Valley might be entered by a tunnel and the line carried down with good gradients to Nari Bank, about 4 miles from Sibi. This line, he estimated, would be about 65 miles long, with no gradient steeper than 1 in 40, and no curve of sharper radius than 1,000 feet.

On this favourable preliminary report a detailed survey was therefore ordered.

4. In February 1886 the Government of India appointed the late Major-General Hancock, R.E., and Mr. Molesworth, C.I.E., as a Committee to visit and report on

the probable cost and efficiency of the temporary line, with instructions also to consider "the plan showing the trace of the proposed permanent line up the Bolan Pass, with such other drawings or rough estimates as may be available," and "to express an opinion on its advantages or otherwise compared with doubling the Sind-Pishin Railway *via* Harnai as far as the Pishin plateau."

5. The Committee's reports, dated 19th March and 17th April, were considered by the Government of India, and the decision (Resolution No 348R.C., dated 7th May 1896) was to the effect that, as the difficulties of doubling the Sind-Pishin Railway were very great, that proposal might be dropped, and that the estimates for the permanent line *via* the Bolan Pass, under preparation, should be referred to the Committee for report as to the suitability of the Mushkaf route for a permanent line. It was also decided that, pending the receipt of this report, no surveys for alternatives of a permanent line from Pirchokie to Mach *via* Kundilani or for extensive improvements in the temporary line need be undertaken.

6. The estimates for the permanent line *via* the Mushkaf were received and referred to the Committee in September; but, owing to the late Major-General Hancock being then in Bombay, and to both he and Mr. Molesworth being required to visit Burma, their report was not available until towards the end of December. Since then we have been awaiting the result of some enquiries about the "Abt System" suggested unofficially.

7. Mr. O'Callaghan's report and estimates show the principal features of the permanent Bolan line project to be as under :—

	Length.	Gross cost.	Deduct for materials of existing line available for transfer.	Net cost.
	Miles.	R	R	R
i. Section—Nari Bank to Mach .	45	74,71,640	9,42,530	65,29,110
ii. " —Mach to Kotal (or plateau) . . . . .	20	90,39,291	10,24,450	80,14,841
TOTAL . . . . .	65	1,65,10,931	19,66,980	1,45,43,951

"The first 45 miles will entail comparatively easy work and bring the railway to a point near Mach, at an elevation of 3,000 feet above Nari Bank." The chief feature in this section is a tunnel 1,000 yards long.

"The last 20 miles involve heavy works," especially tunnel at Dozan. The ruling gradient is 1 in 40; the minimum radius of curvature is 819 feet, which occurs in three cases only. The total rise is 5,443 feet.

Mr. O'Callaghan thus contrasts his project with the Harnai line: "As regards security from landslips and floods, there is no comparison between the two lines."

"The waterway required for the Bolan route is small, and the line is in sound material for its whole length." By the Bolan route the distance from Sibi to Quetta is 94 miles against 154 *via* Harnai, while to Syed Ahmed the distance is 134 as against 151 miles. Again, the total rise on the Bolan line is 5,400 feet against 6,200 on the Harnai line. "The minimum radius of curvature is 819 feet, which occurs in three cases only, while on the Harnai line curves of 600 feet radius are frequent."

8. The Committee to whom, as noted in the foregoing, the project was referred, say that Mr. O'Callaghan "has succeeded in obtaining a good line through very difficult ground, and we fully recognise the energy and engineering ability which he

has displayed in carrying out the survey." They add, "we concur generally in Mr. O'Callaghan's remarks as to the advantages to be gained by constructing this line and have no hesitation in expressing the opinion that its construction is preferable to the alternative of doubling the Sind-Pishin line, and we have no doubt as to the suitability of this route for a permanent line to be worked in the ordinary way." Finally, they say that "provided the work is carried on uninterruptedly, and is not retarded by unforeseen contingencies, we think the whole line might be completed within three years."

9. Our investigations having reached this point, a totally new element here entered upon the question, namely, the possibility of effecting a considerable economy without loss of efficiency by the adoption, on the heavily graded section of the line, of the "Abt System" of ascending steep inclines by means of rack and pinion. This may be described as an improvement on the well-known "Fell," "Marsh" and "Rigi" Systems, and has been successfully used in the Hartz mountains. Mr. Molesworth, our Consulting Engineer, on his trip to Europe last year, inspected the works and has reported favourably on the system, and in the opinion formed by him the late General Hancock concurred, when recently officiating as Director General of Railways.

10. The Committee, having considered the information available in support of this system, suggested that its applicability to the upper section of the present temporary Bolan line should be ascertained before making any final recommendations as to our future course. They anticipate that it may enable a broad-gauge line (with easy curves but steep gradients) to be substituted on that section for the narrow gauge at a cost of possibly 12 lakhs instead of the 80 required by Mr. O'Callaghan's project, and that a saving of 68 lakhs would be thereby obtained, with the result of making the improvement of the present temporary line instead of its abandonment in favour of a new permanent alignment appear in a more favourable light. Enquiries instituted in consequence of this suggestion show that the necessary curves and gradients can be obtained. A reliable estimate of cost of the necessary modification in the present alignment is being worked out, but has not yet been submitted. Meanwhile Messrs. Reinecker, Abt and Company have been addressed as to prices, and such sufficient data have been obtained from them regarding the cost of the special locomotives and central rack as will enable a complete estimate to be framed as soon as information as to the cost of the road itself up to formation level is received.

11. As regards the lower section *via* the Mushkaf Valley, the Committee remarks as follows:—

"18. A further saving might possibly be effected by the introduction of the steeper gradients admissible with the Abt System between Nari Bank and Mach, but without a careful survey the amount cannot be estimated, and we cannot at present say whether the introduction of the system would, on the whole, be an advantage on this part of the line. In any case the saving on the estimate of Rs73,23,000 would be comparatively small. The object to be gained by the construction of the permanent line below Mach is greater security against interruption caused by flood damages, to which the temporary line is constantly liable. In respect of carrying capacity, apart from liability to such interruptions, it is not superior to the temporary line, although the maintenance will probably cost less than the maintenance of the temporary line. It is for Government to consider whether the advantages to be gained justify the proposed outlay."

12. It may here be remarked that the estimates for the permanent line, though they have been considered and generally commented upon by the Committee, have not yet been subjected to the usual formal detailed scrutiny of the Director General of Railways and the Consulting Engineer to the Government of India for State Railways. This must follow before they could be sanctioned for constructions, but they may be taken as sufficient for present purposes of consideration of the general question.

13. In the foregoing paragraphs we have brought the history of the investigation of this important question of improvements in the Bolan route up to date, and we have now to inform Your Lordship that, after full and careful consideration, we have decided that in view of the great economy alleged to be likely to result from the adoption of the Abt System, it is desirable to test at once, in actual practical working, its suitability for our purposes. A rough estimate shows that it could be applied to the Mach-Hirok Section of the Lower Bolan (7 miles), a length containing the steepest gradient of that line but fairly straight, for about 4 lakhs of rupees, including the supply of two locomotives; and we have accordingly given an order to Messrs. Reinecker, Abt and Company of Wurzburg, Germany, for the supply of the necessary material and locomotives, which they have undertaken to deliver within 10 months. Should the experiment be successful, this portion can be retained, and the Upper Bolan converted, thus giving a continuous broad-gauge line on the Abt System from Mach up to the existing broad-gauge on the plateau. We would venture to solicit Your Lordship's approval of our action in the matter, especially as the experiment, if successful, will probably, in addition to the economy that would be effected on the Upper Bolan, admit of a large similar saving being made in crossing the Amran Range, on which subject we shall be addressing Your Lordship shortly.

14. The consideration of the question whether the proposed permanent Bolan line on the lower section *via* the Mushkaf Valley should be undertaken or not we have deferred, pending a visit which His Excellency the Commander-in-Chief and our Honourable Colleague in the Military Department are about to make to Biluchistan and Pishin. Meanwhile we have directed some further investigations as to the possibility of reducing or avoiding by means of the Abt System the tunnel on that length, and we shall inform Your Lordship separately, as soon as possible, of the conclusions we may arrive at.

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*Minute by the HON'BLE SIR THEODORE C. HOPE, K.C.S.I., C.I.E., dated 15th February 1887.*

On a review of the case up to date, three points present themselves for consideration: (1) is any improvement of the temporary line desirable; (2) shall improvement be made on the upper section, adopting the Abt System; (3) should the new lower section *via* the Mushkaf Valley be constructed too?

2. As to the first point, I may state that the temporary line has hitherto well fulfilled the expectations formed of it.

Interruptions from floods have occurred on four occasions during last year, only one of which was serious. They may be taken to have lasted for about 30 days in all. The cost of repairs appears to have amounted to about Rs35,000 in all—not a large sum to pay when we consider that the interruption on the North-Western Railway, near Saharunpore, last rains cost above two lakhs of rupees. All these interruptions were on the Lower Bolan. The upper section scarcely suffered at all.

Notwithstanding these interruptions, and also (1) that the various petty improvements sanctioned in May last had been previously wanting and were only gradually supplied; (2) that no attempt to force on traffic was made during the hottest weeks of the year, the line has carried up to the plateau the whole of the permanent-way, bridgework, other materials, and stock necessary for laying the railway on the plateau, as also about 95 miles of the “Kandahar Reserve permanent-way,” and a certain amount of Commissariat and Ordnance stores. To its existence alone are we indebted for the railway now laid and at work from Darwaza through Quetta to the Amran Range, and also from Bostan downwards to within 6 miles of the Chupper Rift. But for it the plateau lines would have been at least

a year longer in reaching their present condition, and we should have had no railway communication with Quetta till eighteen months later than we actually obtained it. The bulk of the construction materials, &c., having now been taken up, it will very shortly be opened for public passenger and goods traffic.

3. As to the carrying capacity of its two sections, I will now contrast what the line has actually been doing with the estimates of the Committee of last spring, already referred to.

*Lower Section.*—The Committee's estimate (paragraph 17 of Report) was 600 tons per day, and 960 tons on an emergency, with night work. The line has carried 70,000 tons up to 30th December last. The greatest amount in any one week was an average of 435 tons per day; the largest amount in any one day was 724 tons, but 600 tons were carried frequently.

*Upper Section.*—The Committee's estimate (paragraphs 16 and 18 of Report) was 300 tons per day, and 550 tons on an emergency, with night work. The actual amount carried during the three months ending 31st December 1886 was 24,211 tons, being an average of 270 tons per day; but the daily average shews a steady increase, and for the month of December is 297 tons per day, while for the last half of January it has risen to 337 tons.\*

It should be remembered that in the absence of emergency there has been on both sections no night running, and no more work by day than could reasonably be required from the staff with due allowance for trying times of year.

4. Under these circumstances, it may with some force be argued that we require nothing more. Instead of the temporary makeshift originally contemplated, we have got a semi-permanent communication, by which, in time of pressure, troops can be readily conveyed to Hirok, and marched up (9 miles only) to Kotal, where they will resume their journey on the broad-gauge line. Although this communication is liable to interruption below, and would be better if the upper metre-gauge line could be eliminated, it is still good as far as it goes, worth its cost, and sufficient for this route, considering that we have the Sind-Pishin Railway *et id* Harnai besides.

On the other hand, it may be contended that if we ever need to take an army to and beyond Pishin at all, we must have the very best means of communication with it which money and skill can procure, and that two alternative lines (each being only single) are not too much to provide.

5. Balancing the two, I am naturally inclined to take the latter view. It is bad to do matters by halves, and insufficient communications may cost us an army or more. But 145 lakhs (even if this amount be not increased in practice) is a large sum to commit ourselves to specially in our present financial position, when other frontier railway works are contemplated, and the internal famine lines of India are receiving far smaller grants than were not long ago deemed necessary for their due prosecution. I would therefore advocate, for the present, only such improvements in the Bolan line as may be proved to be feasible without very heavy outlay, and proceeding cautiously with them.

6. Passing to the second point, "shall improvement be made on the upper section, adopting the Abt System," it seems to me that this section is the most in need of improvement. To convert it to broad gauge, so as to enable the Bolan and Harnai routes to be worked continuously as one up and down line, would be an enormous advantage. To pay 80 lakhs for this would be a very heavy and at present almost a prohibitive price. But if we can obtain it by means of the Abt System, for anything approaching the far smaller sum named by the Committee, we should

\* I have now learned that average daily quantity of material taken up the ghat section during the last half of February was 440 tons per day, and in the ten days ending March 4th, 480 tons, so that with night running, in an emergency, there should be no difficulty in working up to 600 tons.—T. C. H., March 11th, 1886.

lose no time in doing so. We must, however, be quite certain that the Abt System is in all respects suitable before we adopt it.

7. In order to ascertain whether the Abt System will suit the Upper Bolan, I recommend, after full consultation with all the officers concerned, including Mr. O'Callaghan, that we procure as soon as possible two Abt engines and rack-work sufficient for working the portion of the Lower Bolan between Mach and Hirok (7 miles), which is the steepest but fairly straight. We have communicated with Messrs. Reinecker, Abt and Company of Wurzburg, and ascertained that the materials could be delivered and the line laid in twelve months at a cost of about four lakhs.

8. The third point, as to whether the new lower section, *via* the Mushkaf Valley, should be undertaken too, is virtually dealt with by the remarks in paragraphs 4 and 5. It would undoubtedly be a great gain to be free of the risk of floods which the use of the Lower Bolan entails. Spread over two to three years, the annual charge of 25 to 30 lakhs would not be very onerous, and it would be least at the outset, as we should commence with the tunnel, which governs the rate of progress of the whole. But it may perhaps be held that the matter is not very urgent, that we can get on as we are, at least till we can see our way more clearly, and must make up our minds to interruptions of the Lower Bolan from time to time, and that a year hence, when we have seen what the Abt System will do, we might undertake Mushkaf Section.

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No. 72 (Railway), dated 7th July 1887.

From—The Secretary of State for India,  
To—The Government of India.

Your Excellency's Railway letters Nos. 51, 92, and 96 of 15th March and 16th May 1887, in respect to the contemplated conversion of the existing temporary Bolan Railway into a permanent line, and the introduction on it of the Abt System have received my consideration in Council.

2. I learn from the first of these letters and its accompaniments that the conclusions arrived at by your Government are, that the conversion of the existing temporary Bolan line into a permanent railway would be a preferable course to that of doubling the Sind-Pishin Railway, but that you had deferred the consideration of the question of whether the permanent line shall be undertaken or not pending the visit of His Excellency the Commander-in-Chief and your Military Member of Council to Baluchistan and Pishin.

3. Meantime, with the object of lessening as far as possible the cost of conversion and working a permanent line, you had taken steps for the trial on the Mach-Hirok section of the Lower Bolan of the "Abt" System of ascending steep inclines, with engines of the 5' 6" gauge in place of the existing metre gauge, and solicit my approval of your action in this matter.

4. While fully concurring in your desire to effect the requisite alterations in the line in the most economical manner, I regret that your Government should, in this instance, have departed from the usual course, and that, without giving me an opportunity of obtaining the advice of my professional officers on a matter in which recent knowledge and experience are so valuable, you should have ordered direct from a German Company, without reference to me, stores and apparatus involving an expense of four lakhs of rupees.

5. I regret this the more, as it would appear very doubtful from the reports\* of

\* Dated 15th and 23rd April 1887.

Sir A. M. Rendel and General Hyde, herewith forwarded, whether economy and efficiency would not be more readily and completely served by the employment of the Fairlie bogie engine on the steep inclines which have to be traversed on the line in question. So impressed am I by the remarks of these officers on the subject,

that it appears to me it would be desirable to adopt the suggestion that one or two of your railway engineers, including an officer of the locomotive branch, should be specially selected and deputed to visit the Mexican Railway between Vera Cruz and Mexico, where the Fairlie engines have for years been worked on steeper inclines than those which occur in the Bolan Pass.

6. I may, therefore, consider it desirable to direct Lieutenant-Colonel Wallace, whose deputation by your Government to visit Wurzburg on his way to this country has been authorized, to go on to Vera Cruz for the purpose. I also propose at once to take such preliminary steps as will enable me to obtain without delay a supply of Fairlie engines of 5' 6" gauge, and of a type suitable for working the inclines on the Bolan Pass, as soon as Colonel Wallace has reported upon his experience of the Mexican lines. I consider it essential that this class of engine shall have a full and fair trial upon the Bolan line, and any locomotives which may be obtained for this purpose must in any case be very useful, inasmuch as they will form the nucleus of a reserve which will eventually, without doubt, be required, and may also be worked over the portions of the line fitted for the Abt System.

7. With reference to the special engines and plant of this last-named pattern, I likewise have to observe that, in any case, no further orders should be given for their manufacture in Germany. I consider it very inexpedient that any railways, such as those on the Quetta frontier, should be dependent for the supply of essential materials of rolling-stock on foreign countries, from which political complication might at any moment interrupt their provision.

8. It may be presumed that whatever is needful might be manufactured on patterns supplied by the Abt Company in this country, a suitable royalty being paid for the authority; and, notwithstanding your expectation that the self-interest of the German patentees will ensure their supplying everything of the best, and that this safeguard will suffice, I am advised that experience by no means confirms this view, and shows that, even with the most careful and experienced manufacturers, a close inspection of supplies such as these is essential.

9. With regard to the main question of forming the Bolan Railway into one of a permanent character, I observe that the Committee appointed to examine that line state, in paragraph 25 of their Report, that they "see no reason why the temporary railway should not be maintained and worked for an indefinite time, subject to the remark that they cannot possibly predict what the effects might be of an extraordinary flood, and that the maintenance must always be abnormally expensive when compared with the cost of ordinary maintenance on a permanent line."

10. The testimony of Sir T. Hope is also to the effect that the temporary line has more than fulfilled the expectation formed of it, and he is of opinion that, for the present, "only such improvements in the Bolan as may be proved to be feasible without any heavy outlay" should be undertaken, "proceeding cautiously with them."

11. I agree in this view, and I am further of opinion that, while it is important to establish an alternative line to the Sind-Pishin Railway which may be depended upon for a safe, separate, and permanent communication with Quetta and the districts beyond, it is very desirable that every effort should be made to remove all doubts as to the best means of accomplishing this object before further action is taken. The present line, although designated a temporary one, can evidently be maintained for the immediate object of carrying all needful military stores and material, and I should deprecate any hasty decision in regard to the ultimate alteration of its alignment. These views are in complete accordance with those expressed in your later letter No. 96 of 16th May, based on the reports of His Excellency the Commander-in-Chief and General Chesney.

12. I shall await, therefore, the further deliberations of your Government on the subject, after the suggestions now made in connection with the Abt and Fairlie Systems have received your consideration, and while relying on the uninterrupted



maintenance of the present line, I shall defer coming to a decision on any new project until it is perfectly clear that the best plan for the purpose has been ascertained after thorough inquiry. And I consequently request that nothing may be done to prejudge the questions involved until I have been fully informed of the plans you recommend and they have received my sanction in Council. It also seems to me probable, considering the nature of the engineering points to be dealt with, that it would conduce to a satisfactory and speedy decision if, when your proposals are matured, you were to depute Mr. Molesworth and the principal Engineer employed on the preparation of the project, who will necessarily have a full knowledge of all local details, to visit this country and to consult with Sir A. Rendel on the whole question, including the system to be adopted for crossing the Amran Range.

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*Report by SIR A. M. RENDEL, dated 15th April 1897.*

I do not think it would be generally admitted by engineers that a gradient of 1 in 40, or thereabouts, was the limit at which locomotive power can be economically employed in the ordinary fashion. There are too many instances to the contrary. In India itself, for instance, the Bhore and Thull Ghats have long inclines of 1 in 37, and no one, I should think, would say that the limit of working by adhesion of wheel to rail had been reached there. One of the most remarkable instances to the contrary, however, is to be found on a railway for which I have acted for many years as Consulting Engineer. I mean the Mexican, a line running from Vera Cruz to the city of Mexico, a distance in all of 263 miles. This line climbs, without a break, a height of about 7,000 feet on inclines of 1 in 33 and 1 in 25, of which latter there are 16 miles practically unbroken, besides other lengths, and nearly the whole on curves of 350 feet radius, following each other so closely that trains are sometimes on two or even three at once. Yet this line has now been in successful operation for more than 15 years. Accident on the incline is almost unknown, and though of course costly from a variety of causes to work, not so costly that traffic such as that which is dealt with on the Bolan need take cost into consideration.

The permanent-way used on the inclines is, I should observe, of the simplest kind, 65lb steel Vignoles' rails, spiked down to timber sleepers mostly of soft wood with tie-bars between the rails to keep the gauge.

The success of the line mechanically is wholly due to the use on the inclines of engines of the type known as the Fairlie, a type much too costly in my judgment in working for ordinary lines, but which has proved admirably adapted to lines of extraordinary grades and curvatures. This is due to the design of its boiler and machinery, the former being specially suited to sharp grades, and the latter to sharp curves. The Abt System, described by Mr. Molesworth, whatever may be its advantages, appears to require flat curves. But the necessity for steep inclines generally goes with the necessity for sharp curves also, and the fact that the Fairlie engine on a 5' 6" gauge can be made to go round curves, if need be, of 200 or even 150 feet radius (though such curves are of course only to be submitted to when unavoidable) gives it at once an enormous advantage over an engine which apparently requires curves not sharper than about 600 feet radius.

The Fairlie engine is so well known that I need not describe it here. It will be sufficient to say that those employed on the Mexican line have six wheels in each bogie, or 12 in all, with a weight on each wheel of about 6 tons when the water tanks and fuel boxes are full, and that they are capable of taking up, and do take up, long inclines of 1 in 25, combined with almost continuous curves of 350 feet radius, gross loads of 140 tons besides their own weight.

I need not say that such engines could be worked on an improved Bolan line. Engines of the same kind on the metre gauge now work the existing line with success, though they are not nearly as good as they might be, because, having had

to build them for curves of 70 feet radius, we were compelled to limit the number of wheels to four in each bogie, and to make many compromises which diminish the efficiency of the engines.

I am satisfied that such Fairlie engines as we might put on the 75lb rails used on the Bolan would take gross loads up inclines of 1 in 23½, and round curves of 350 feet, as high as 180 tons besides their own weight, and I cannot but think that they would be more satisfactory in all general respects, as well as in working cost, to a rack system of any present known kind.

In respect to the capacity of heavy inclines for traffic, while I do not say that the Mexican traffic is now heavy, a large traffic has been carried over it, and I have never heard that we had approached the limit of its capacity (it is a single line, and trains are not run over the inclines at night), and I am surprised that the capacity of the Bolan lines should be rated so low as it is in paragraphs 17 and 18 of the Committee's Report, dated Quetta, 19th March 1886. The data on which these capacities of the two gauges is based are not given. But it occurs to me that it has not been taken into account that all the down traffic may be put into one train. This is the regular practice on the Mexican line, when 100 to 120 four-wheel wagons, or 50 to 60 bogie wagons are, by preference, sent down the incline at one time, the length of the train actually being supposed to help in checking its descent, because it is sometimes *on two or even three curves at once, and the consequent friction acts as a brake*. Or it may be that the capacity has been determined by the number of engines now available. If so, the capacity of each gauge may be increased by increasing the number of engines.

It seems therefore to me that, besides considering the cost of altering the present temporary line into a form which will admit of the Abt System being put into operation, the cost of converting it into a line workable by broad-gauge Fairlies by flattening the curves to a radius of say 350 feet should also be considered. That the present gradient of 1 in 23½ is quite workable needs no proof, because the present very inferior metre-gauge Fairlies do work it. But of course if these gradients could be reduced a little it would be an advantage.

In the present state of the locomotive market, we could build such engines as I have described for about 4,000l., each, for, say, not less than five delivered in this country. I ought to note that the Mexican line is worked by hand-brakes on the carriages and wagons. The engines have the Chatelier and Westinghouse brakes as well. But Westinghouse has been taken off the carriages and wagons.

I note Mr. Molesworth's remark as to steel sleepers being made to gauge in respect to the relative level of the rails and centre of the sleepers, and will see that it is attended to in future in principle; but we find it better to make about four feet in the centre of the rail flat.

I should like to observe, in conclusion, that I think the Government of India would find advantage in deputing two engineers connected with the Public Works Department, one civil, the other locomotive, or, if not, both the latter, to visit the Mexican Railway and report upon the working of its inclines. We have reached a point of the development of the Indian Railway system at which it becomes important that the best mode of constructing and working severe gradients should be thoroughly considered, and the experience of a line like the Mexican would, I think, greatly aid the Government in coming to right conclusions upon it. It may be reasonably supposed that many officers on furlough would be glad of an opportunity of examining so interesting a line.

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*Report by GENERAL HYDE, dated 28th April 1887.*

Despatch No. 51 of 15th March has now been received, and together with copy of Mr. Molesworth's report on the Abt System has been placed before Sir A. Rendel.

The Despatch gives the reason of the Government for considering the question of the adoption of the Abt System for working the Bolan Railway, and explains that the present proposal is only an experiment, and is to be limited to the construction of a length of seven miles containing the steepest gradient on the line, but fairly straight, and it states that an order has been given to Messrs. Reinecker, Abt and Company for two locomotives, and (as I understand) the necessary permanent-way, &c., estimated to cost four lakhs of rupees.

As to the question of supply, it will be seen that no information whatever is given, and we are just as much in the dark on this point as we were on receipt of the telegram.

But as regards the engineering view of the line, and the question of adopting the Abt System, the Despatch and papers collected have enabled Sir A. Rendel to consider the question, and I annex his report.

I entirely agree in this report, and especially to what Sir A. Rendel advises with regard to deputing two engineers from the Frontier Railway to visit Mexico.

For some time back it had occurred to me that such a course was advisable, *viz.*, to send a locomotive engineer from the frontier line to see the successful working of the Mexican line by the Fairlie engines, and I had talked it over with Sir A. Rendel. I now think the addition of the civil engineer is certainly advisable, and I would strongly support the proposal.

I do not know what steps can be taken regarding the contract entered into by the Government of India with Messrs. Reinecker, Abt and Company, for we are in entire ignorance as to what the contract is. However, if it can be held over till the whole question can be discussed on Sir A. Rendel's report, I think it should be. But if it is not considered advisable or practicable to do so, I think that the contract should be carried out so far as is possible under the inspection of Sir A. Rendel, in the usual way.

I annex a communication from Captain Fairholme, the Agent of the Company in England, and would ask for instructions as to the reply to be given to him.

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No. 163 (Railway), dated 19th August 1887.

From—The Government of India,

To—The Secretary of State for India.

We have the honour to acknowledge the receipt of Your Lordship's Railway Despatch No. 72, dated 7th July 1887, commenting on the views expressed by us in our previous Despatches regarding the contemplated conversion of the existing temporary Bolan Railway into a permanent line, and the experimental introduction of the Abt System on a portion of it; also transmitting, for our consideration, copies of reports by Sir A. Rendel and General H. Hyde, R.E., dated respectively the 15th and 28th April 1887, who advocate the adoption of the Fairlie type of engine as used on the Mexican Railway in preference to the Abt System.

2. In reply, and in continuation of our telegram No. 208 R.O. of the 4th

Your Railway Despatch No. 72, dated 7th July last, paragraphs 5 and 6, Bolan Railway. Wallace's return to North-Western Railway on expiration of privilege leave very necessary. If officer required for Mexico, we would suggest Major W. Shepherd, now on way home. We also deprecate any measures involving order of Fairlie engines till practical objections of our officers have been considered. Please telegraph decision about Shepherd.

August, repeated on the margin for easy reference, we have to express our regret that Your Lordship should not have approved of our action in having ordered direct from the manufacturers in Germany the small quantity of Abt materials required for experiment on the Bolan Railway. We would, however, explain that

we considered the importance of an early decision as to the best method of surmounting the difficulties of both the Bolan Pass and the Amran Range, which had been recently impressed on us by the receipt of Your Lordship's Despatch No. 24, Military, dated the 27th January 1887, to warrant the course pursued.

3. Our reasons for deeming justifiable a trial of the Abt System, and doubting the suitability of the Mexican Fairlie engine for use on the Bolan Railway, are very clearly stated in the accompanying note by our Consulting Engineer for State Railways, in which he discusses the relative merits of the two systems.

From the concluding paragraph of this note, it will also be seen that a design for a special type of engine expressly suited for the heavy gradients on the Frontier system of railways is now under consideration; and we trust Your Lordship will not commit us to the adoption of the Fairlie type until the Abt System has been tried and the whole question has been fully discussed in all its bearings.

4. As regards paragraph 7 of the Despatch under reply, we need scarcely say that Your Lordship's wishes will be attended to; but we may add that it never was our intention to give further orders to the firm in Germany without previous reference to Your Lordship.

5. In our telegram above quoted, we urged upon Your Lordship the necessity for Colonel Wallace's return to his post as Director of the North-Western Railway, at the expiration of his privilege leave, not only because we wish to have the benefit of the experience he will have gained about the Abt System and materials when the work is in progress, but also on the grounds mentioned in Your Lordship's Railway Despatch No. 70 of the 7th July 1887. Should it still be desired to send an Engineer officer to Mexico, we would, as already suggested, recommend Major W. Shepherd, R.E., now on leave in England, for that duty.

6. We take this opportunity of reporting, for Your Lordship's information, that we have under consideration projects for the construction of a broad-gauge line throughout the Bolan Pass, on gradients of 1 in 20 and 1 in 25; but this subject will be fully reported on before any action is taken.

7. We have to add that there is reason to believe that the Amran Range can be passed, if so desired, by a line not requiring the Abt or other special engines or permanent-way material.

*Note by the Consulting Engineer to the Government of India for State Railways on the Abt versus Fairlie engine for the Quetta Loop, Sind-Pishin Section, North-Western Railway, dated 5th July 1887.*

Sir Alexander Rendel has apparently somewhat misunderstood the tendency of the introductory remarks of my report on the Abt System, dated 21st June 1886.

It was not my intention to enunciate the principle that the "*limit of working by adhesion of wheel to rail had been reached*" on a gradient of 1 in 40 or thereabouts. I was aware that, in many places, gradients far steeper than that limit had been worked by adhesion alone, notably on our Bolan Railway and on the Mauritius Railway with its ruling gradient of 1 in 27.

Mr. Mosse, the Manager of the Mauritius Railway, after experience in the working of this gradient of 1 in 27, has expressed the opinion that "*the severity of any gradient for a long rise should never exceed 1 in 40.*" I am not prepared to endorse fully Mr. Mosse's opinion; but I consider that when a gradient exceeds 1 in 40 or thereabouts, it becomes a question for serious consideration whether a departure from the system of working by adhesion only may not be expedient. I may even go further, and express the opinion that it is possible that certain conditions might justify such a departure, even on gradients flatter than 1 in 40, because on such gradients a very large proportion of the power of the engine is absorbed in hauling its own load up the incline, leaving but little for the paying load, especially when there may be frost or snow on the rails.

This is the opinion I intended to express in my report; but I am not prepared to lay down a hard-and-fast rule or to insist on the necessity for limiting the use of engines which work by adhesion only to gradients steeper than 1 in 40 or thereabouts.

The adoption of any system of working must depend on the respective conditions of each individual case, such as the climatic influences, the extent of the traffic, the length of the incline, and other conditions affecting a decision.

Taking, however, the case of the Upper Bolan Railway, I am decidedly of opinion that an abandonment of the principle of working by adhesion alone is amply justified by the conditions of the case.

It must be remembered that when the tractive force of an engine exceeds its adhesive powers, as is generally the case when there is frost or snow on the rails, the load on the driving or coupled wheels determines the power of the engine.

In the case of the Mexican Railway, the engines are certainly working under climatic conditions far more favourable than those which must obtain on the Upper Bolan Railway; consequently, an engine of a type which may afford complete satisfaction in Mexico might fail to do so under the altered climatic conditions of the Upper Bolan.

I do not know exactly the climatic conditions existing on the Mexican Railway; but it is well within the tropics; and I find, on reference to M. Mahlman's tables of temperature, that Mexico city has a mean annual temperature of about 5° Faht. higher than Ootacamund, which is also in the tropics, and is about the same elevation above mean sea-level. At Ootacamund the *minimum* temperature is given as 38° Faht.

I have no definite information as to the *minimum* temperature of Mexico city; but as the mean annual temperature is higher than that of Ootacamund, it is probable that on the Mexican Railway snow is unknown, and that frost rarely, if ever, occurs; and even then probably only in deep ravines and basins where the air cannot circulate freely.

The conditions in the Upper Bolan differ very widely from those above mentioned. Snow is common and frost occurs regularly for many months in the year; indeed, the cold is so intense that deaths from frost-bite are very common; and in the winter months it is impossible to get men to work before 10 or 11 in the day, when the temperature of the air has been raised by the sunshine. The conditions of the Mexican and Bolan Railways, therefore, differ widely in this respect, which, as I shall presently show, seriously affects the relative working power of locomotives which act by adhesion only.

For the purpose of illustrating this, I have instituted a comparison between the calculated performance of the Abt engine which is now under supply for the Upper Bolan Railway and one of the Mexican type, assuming similar conditions in each case.

The comparison is given in the table annexed to this note. In making the comparison I have assumed an average of 90lb per square inch in the cylinders, as that appears to have been about the condition under which the Mexican engines have worked.

The comparison has been made to show the relative load taken in winter and summer; and the relative efficiency has been taken on the basis of the relative weight of each engine.

An examination of the table shows that though the relative efficiency of the Abt engine and the Mexican engine is as 1.75 to 1.00 on gradients of 1 in 40 with fair adhesion, this relative efficiency increases on a gradient of 1 in 25 from 1.87 to 1.00 in summer to 3.16 to 1.00 in winter; or, in round numbers, the Abt engine has nearly twice the efficiency of the Mexican engine in summer, and more than three times the efficiency in winter, so that although the peculiar conditions of the Mexican Railway may justify the use of an engine of the Fairlie type, it appears to be quite unsuited to the altered conditions of the Upper Bolan Railway.

It is a mistake to suppose that the Abt System necessitates curves of large radius.

The Oertelsbrüch Railway has been constructed on the Abt System with curves of 325 feet radius, and it is said to work very satisfactorily; and Messrs. Reinecker, Abt and Company informed me that they are now contemplating a project on the Abt System, with curves of 197 feet radius.

I do not, however, recommend the adoption of curves of less radius than 600 feet on the Upper Bolan Railway, because the adoption of such curves would preclude the use of a large portion of the rolling-stock of the State and Guaranteed Railways of India; in fact, the rigid wheel base of our passenger stock is longer than is desirable for running on curves of even 600 feet radius; and as the Upper Bolan Railway has been constructed essentially for military purposes, it would be unwise to adopt curves which would in any way interfere with a free interchange of rolling stock of any of the Indian Railways of similar gauge. The Fairlie engine is open to some objections, and it offers few advantages over the ordinary type of engine, unless it be desired to adopt curves of exceptionally small radius.

I have been in communication with the Manager and Locomotive Superintendent of the North-Western Railway on the subject of designing an engine which will be more suitable to the heavy grades of the Frontier system than the L class engine, which was designed for flatter grades and lighter rails than those which have since been adopted; but this engine is in an embryo state at present. When I wrote my report on the Abt System, I considered it doubtful whether a gradient flatter than 1 in 20 could be secured on the Upper Bolan Railway. For such a gradient the advantage of the Abt System would have been still more marked than with the gradient of 1 in 25 which we have fortunately been able to obtain. With a gradient of 1 in 20 the efficiency of the Abt engine in winter would have been  $3\frac{1}{2}$  times as great as that of the Mexican type of engine; but even with the flatter gradient of 1 in 25 the relative efficiency of 3.16 to 1 is amply sufficient to justify the adoption of the Abt engine on the Upper Bolan Railway.

*Comparative performance of Engines of the "Abt" and the Mexican types at slow speeds.*

	Abt.	Mexican.
Weight of Engines . . . . . tons	53	72
Weight available for adhesion . . . . . "	41.34	72
Diameter of cylinder . . . . . inches	18.896	16
Stroke . . . . . "	23.622	23
Effective mean pressure . . . lb per sq. inch	90	90
Diameter of coupled wheels . . . . . inches	51.182	42
Tractive force adhesion . . . . . lb	14,882	24,179
"    " pinion . . . . . "	14,062	...
Total tractive force . . . . . "	28,944	24,179
Adhesion in frost . . . . . tons	3.69	6.43
Traction for pinions . . . . . "	6.28	...
Total traction . . . . . "	12.92	10.79

*Comparative performance of Engines of the "Abt" and the Mexican types at slow speeds—continued.*

		Abt.	Mexican.
Gradient 1 in 40, summer	{ Total load* . .	486	407
	{ Net load . .	433	335
	{ Relative haulage . .	1.29	to 1.00
	{ " efficiency . .	1.75	to 1.00
" 1 in 25, summer	{ Total load . .	300	251
	{ Net load . .	247	179
	{ Relative haulage . .	1.38	to 1.00
	{ " efficiency . .	1.87	to 1.00
" 1 in 40, winter .	{ Total load . .	375	242
	{ Net load . .	322	170
	{ Relative haulage . .	1.89	to 1.00
	{ " efficiency . .	2.57	to 1.00
" 1 in 25, winter .	{ Total load . .	232	149
	{ Net load . .	179	77
	{ Relative haulage . .	2.32	to 1.00
	{ " efficiency . .	3.16	to 1.00
" 1 in 20, winter .	{ Total load . .	188	121
	{ Net load . .	135	49
	{ Relative haulage . .	2.76	to 1.00
	{ " efficiency . .	3.74	to 1.00
" 1 in 15, winter .	{ Total load . .	143	92
	{ Net load . .	90	20
	{ Relative haulage . .	4.5	to 1.0
	{ " efficiency . .	6.11	to 1.0

\* The "total load" includes the weight of engine.

The "net load" includes the weight of the wagons hauled, with their contents.

5th July 1887.

GUILFORD L. MOLESWORTH.

No. 117, dated 3rd November 1887.

From—The Secretary of State for India,

To—The Government of India.

In acknowledging the receipt of your letter No 163, Railway, dated the 19th August last, regarding the introduction of the Abt System on a portion of the Bolan Railway, and the relative advantages of that system and of the Fairlie type of locomotive as applied to steep inclines, I have to inform you that I have determined to await the result of the experiment which is about to be made on the Bolan with the former, as well as the report of Major Shepherd, R.E., who, in accordance with your recommendation, has been selected to proceed to Mexico to examine the working of the Fairlie engines on the inclines of the railway there, before coming to a decision as to which is the most suitable plan to adopt as a permanency.

2. Major Shepherd will be accompanied by Mr. E. W. M. Hughes, of the Locomotive Department of your State Railways.

3. When forwarding to me the results of the experiments with the Abt System, I shall be glad to be favoured with your opinion on the same, as well as with the views of the executive officers who may be employed in conducting them.

No. 178 (Railway), dated 3rd October 1887.

From—The Government of India,

To—The Secretary of State for India.

In continuation of correspondences ending with our Railway Despatch No. 163 of the 19th August 1887, and more particularly with reference to our Railway Despatch No. 96 of the 16th May 1887, we have the honour to report the results of the survey for improving the Upper Bolan line, by continuing the 5' 6" gauge through from Hirok to Kotal on the Quetta Loop of the Sind-Pishin Section, North-Western Railway, and providing a central rack with the necessary machinery on the Abt System.

2. From the accompanying copy of correspondence submitted by the Director General of Railways, and from the note by our Consulting Engineer for State Railways, it will be observed that there are three distinct questions at issue, *viz.*—

1st—That of improving the Upper Bolan line between Hirok and Kotal by constructing a new broad-gauge line and eliminating the present metre-gauge.

2nd—Whether the Abt System shall be adopted for working the steep gradients on the new broad-gauge line between Hirok and Kotal, should it be decided to construct such a line.

3rd—Whether, if the broad-gauge, combined with the Abt rack, be adopted between Hirok and Kotal, the same system shall be extended to Ab-i-Gum, or any point short of that place, as Mach.

3. The first question is, we think, hardly open to discussion. The disadvantages of a break of gauge for the short length between Hirok and Kotal must be patent to every one, and in our Railway Despatch No. 96, dated 16th May 1887, we stated that we had then arrived at the conclusion that the substitution of the broad for the metre-gauge is necessary.

4. To help in arriving at a decision in respect of the second question, two alternative routes have been surveyed between Hirok and Kotal,—

(a) The "high level" route, with curves of 819 feet radius and a ruling gradient of 1 in 25, estimated to cost in round figures 13½ lakhs of rupees, exclusive of the value of Abt rack and locomotives.

(b) The "low level" route, with curves of 600 feet radius and a ruling gradient of 1 in 20, similarly estimated to cost 10½ lakhs of rupees, also exclusive of the value of Abt rack and locomotives.

5. As the L class engines at present on the North-Western Railway can, and do now, between Ab-i-Gum and Hirok, work the ordinary trains, and as in times of pressure it is most desirable that the line should be such as can be worked without difficulty by ordinary engines, even if the Abt rack be laid and Abt engines supplied, we have no hesitation in recommending the high level line for adoption as against that on the low level which had a gradient of 1 in 20.

6. The additional cost of an Abt rack on this line is estimated at Rs. 1,74,526, to which Rs. 10,000 should be added for tongues. The cost of 18 Abt engines to work this section is estimated at Rs. 9,37,494, but in comparing the relative cost of an ordinary line and one supplied with the rack, we do not consider that the cost of the Abt engines should be added to the latter, because the North-Western Railway requires for ordinary maintenance from 20 to 25 locomotives a year, and all that is necessary is to order Abt engines in place of some of the ordinary types. The Abt engines cost about 50 per cent. more than the L class engines, but the Note of our Consulting Engineer for State Railways shows that the load which can be taken by the former up a gradient of 1 in 25 is three times as much as that which the latter can haul. Therefore it follows that three times the number of L class engines will be required to do the same work over the steep gradients, and this more than com-



pensates for the extra cost of the Abt engines. These engines, it may be observed, can, if found convenient, be worked over any portion of the line by adhesion only.

7. On this basis, that is, omitting the cost of engines from both projects, the high level will cost  $13\frac{3}{4}$  lakhs of rupees if adapted for ordinary engines only, and about  $15\frac{1}{2}$  lakhs with the rack. This difference in prime cost is, we consider, more than compensated for by the additional haulage power obtained by the use of the Abt rack and engines.

The increase in haulage power is greater on the upper parts of the line, which are more subject to frosts than the lower sections, and consequently it is more necessary to have the rack on this upper section than on the lower only, other things being the same.

And it has further to be observed that the 7 miles of rack already ordered for experimental purposes will suffice for the whole of the gradient in excess of 1 in 40 between Hirok and Kotal, so that no further cash expenditure will be required on this account.

8. In this connection we have the honour to enclose for Your Lordship's information copy of a report by Colonel W. A. J. Wallace, R.E., on the Abt System of ascending steep inclines, written at our desire after an inspection of the open line in the Hartz mountains. This report confirms the anticipations we previously held as to the advantages of such a system.

9. As to the third question, we are of opinion that to put down an expensive rack between Hirok and Mach or Ab-i-Gum on the present alignment would not be prudent or justifiable, as it is exposed to the risk of floods and consequent damage which it would not only be expensive to repair, but which might also involve considerable delay before new materials could be supplied.

But as the gradients on this section are considerably in excess of 1 in 40, we certainly consider it desirable, should the Abt System be, as we recommend, adopted between Kotal and Hirok, that it should be extended so as to include the whole line to Ab-i-Gum, on an alignment beyond the reach of flood.

10. As far as Mach a line has been reconnoitred which, it is believed, would ensure this, and if a portion of the route *via* the Mushkaf Valley be adopted for a short distance below Mach, we believe that a connection can be made between it and Ab-i-Gum, or some point below that place which will allow of the Abt rack being safely extended to the lowest point to which gradients of 1 in 25 will be necessary.

We propose to make this the subject of a later reference to Your Lordship, and this portion of the project need not interfere with the decision which may be come to with regard to the present metre-gauge section between Hirok and Kotal.

11. In conclusion, we would ask for Your Lordship's early orders with regard to last named section, and trust that they will enable us to commence at an early date on the work on the high level line, the estimate for which amounting to  $\text{Rs. } 15,51,758$  (see paragraph 9), we recommend for Your Lordship's sanction.

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Dated 22nd November 1887.

Telegram from—Secretary of State,  
To—Viceroy.

Your Railway Despatch No. 178, 3rd October last. I have sanctioned high level route between Hirok and Kotal. A Despatch on the subject will follow.

No. 27 (Railway), dated 28th February 1888.

From—The Government of India, P. W. Dept.,

To—The Secretary of State for India.

In our Despatch No. 51, Railway, dated 15th March 1887, we forwarded to Your Lordship a Resolution\* embodying the estimates of cost of the temporary line of railway which had recently been laid up the Bolan Pass to the Quetta plateau. The figures were based upon estimates of cost up to November 1885, added to some round sums for further improvements said to be required. We were not satisfied that either the figures or the requirements were final, and the Resolution above quoted set forth that a Committee was to be appointed to consider "how far the works provided in the estimates are suitable and sufficient for their present purpose of working the line as a semi-temporary railway, and, if deficient, what additional works will be required, with their probable cost."

It was our intention, as soon as the report should be received from this special Committee, to ask Your Lordship's formal sanction to the estimates of cost which might be arrived at on their recommendations.

2. The report of the Committee, on which the late Major-General Hancock and our Consulting Engineer for State Railways were associated, was forwarded to Your Lordship with our Railway Despatch above quoted. The numerous important issues, which were discussed in it, diverted our attention from the consideration of the cost of the temporary Bolan line, and it has only recently come to our notice that Your Lordship's sanction is still required to the expenditure which we have incurred upon it.

3. Your Lordship will observe that Major-General Hancock's Committee recommended an outlay of 2 lakhs for additions and improvements to the line as they found it in February 1886. This, they considered, would enable the railway to carry up the re-serve of permanent-way materials required for the construction of the railway from the top of the Bolan Pass to Quetta, and ultimately allow the platelaying of the Sind-Pishin Railway to be pushed on from the Quetta end, and meet the rails advancing up the Harnai Valley from Nari. As soon as Bostan was reached, part of the rails and sleepers carried up the Bolan Railway were to be laid to the foot of the Khwaja-Amran Range, and the balance of permanent-way material was to be stored near Quetta, in readiness for any onward movement in the direction of Kandahar that might be necessitated by political exigencies.

General Hancock's Committee recommended that troops should only be carried in case of absolute necessity, and then only to Bibinani or Ab-i-Gum.

At the time of their inspection the outlay on the line was estimated at Rs53,87,000 up to the 31st March 1886, and at Rs57,77,000 to the end of June of the same year.

4. On the 31st March 1887, we finally closed the Construction Accounts of the

Main Heads of Account.	Outlay to 31st March 1887.
Preliminary Expenses . . . . .	Rs 3,126
Land . . . . .	
Construction of Line . . . . .	6,06,539
Ballast and Permanent-way . . . . .	34,87,241
Stations and Buildings . . . . .	7,57,380
Plant . . . . .	1,08,715
Rolling Stock . . . . .	7,30,245
Establishment . . . . .	2,74,268
	59,97,512
Deduct—Receipts on Capital Account . . . . .	21,527
TOTAL . . . . .	59,75,985

Bolan Railway which from Pirchokie to Darwaza-Kotal is about 57 miles in length. The expenditure then stood at Rs59,75,985, as shewn in the margin. During the current year we have provided a further sum of Rs81,000, thus making the total cost of the line, up to the 31st March 1888,

R60,56,985. This amount does not include the expenditure of 13½ lakhs, which is now being incurred, under the separate sanction received in Your Lordship's Railway Despatch No. 136, dated 8th December 1887, for the conversion of the metre-gauge line, between Hirok and Darwaza-Kotal, to a broad-gauge line on a high level.

5. Out of this total of 60½ lakhs, four lakhs are a book debit for rolling-stock transferred from the Rajputana-Malwa Railway, but paid for several years ago. In this are included the Fairlie engines, which for many years were lying unused at Khandwa, but which we were able to utilise on the metre-gauge section between Hirok and the Darwaza-Kotal. Eleven and a half lakhs represent freight paid to railways for the carriage of material. A considerable portion of this has come back to the Treasury in the shape of Government revenue.

6. Allowing for these deductions, the cost of the line is still doubtless high for a temporary railway. It should, however, be borne in mind that the preparations for war which were being made when the line was commenced, in themselves enhanced the cost of the work very considerably, and that, owing to the exceptional heat in summer and the extreme cold in winter of the Bolan Pass, it would under ordinary circumstances have been found difficult to provide large gangs of labourers for work in this inhospitable region. In addition to the rigorous climate of the Bolan, the severe outbreaks of cholera which swept over the Pass, the deadly fever which prevails in this locality, the scarcity of provisions, and the unsettled state of the frontier deterred the natives of India from accepting service at ordinary rates, and in order to attract the necessary labour, inducements in the shape of high pay, clothing and rations had to be offered. Add to this that, owing to the possibility of war, the construction of the line had to be pushed on rapidly, and it is not surprising that its construction proved a good deal more costly than was anticipated.

7. Besides this, the line has been so much improved that, instead of being an expedient to be only used at high pressure for a time during war, with the best arrangements that could be hastily got together under such circumstances, it has now become a line of railway which, although still temporary in character, inasmuch as it is liable to damage by floods, has nevertheless been opened for public traffic, and has carried mails, troops, and passengers since the 1st April 1887, along its entire length from Pirchokie to Kotal-Darwaza, without any important interruptions.

As regards the work which the line has done, we would refer Your Lordship to the Minute by the Hon'ble Sir Theodore Hope, K.C.S.I., which formed an enclosure to our Railway Despatch No. 51 of 1887.

8. With these remarks, we venture to ask Your Lordship's sanction to the expenditure of R60,56,985, which has been incurred in constructing the temporary railway from Pirchokie to Kotal-Darwaza at the top of the Bolan Pass. At the same time we ask to be allowed to express our regret that, owing to an oversight, Your Lordship's sanction was not obtained to the estimates in the usual course.

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No. 43 (Railway), dated 19th April 1888.

From—The Secretary of State for India,

To—The Government of India.

Your Excellency's Railway letter No. 27, dated the 28th February 1888, reporting the expenditure in connection with the temporary line of railway up the Bolan Pass to the Quetta plateau, and requesting confirmation of your proceedings, has received my consideration in Council.

2. I learn from this letter that the outlay on this line, which was estimated at R57,77,000 up to end of June 1886, amounted to R60,56,985 up to the 31st of March 1888, which shows an increase of 5 per cent. over that estimate, and about

15½ per cent. above the estimate originally furnished. This expenditure on a temporary railway is, as you observe, somewhat high, but the climatic and physical difficulties in connection with its construction were exceptional, while the services rendered by it since its opening in April 1887, in furthering the early development of our North-West frontier railway system, fully justify, in my opinion, the outlay incurred on it.

3. I accord my sanction, therefore, to the outlay of R60,56,985, on the detailed information supplied in the fourth and fifth paragraphs of your letter under reply, on the Bolan Pass temporary railway.

4. This sanction is, of course, irrespective of the cost of converting the existing metre-gauge track to a broad-gauge line on a high level, as approved by my Railway Despatch No. 136, dated 8th December 1887, in respect to which operation and its cost I request that your Government will keep me fully and early informed.

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## 3.—Amran Extension, Sind-Pishin Railway.

No. 174 (Railway), dated 26th September 1887.

From—The Government of India,

To—The Secretary of State for India.

With reference to Your Lordship's telegram of 3rd August 1887, and our reply

To Secretary of State, No. 112 (Mily.), dated 10th July 1885, paragraphs 4 and 5.

From Secretary of State, No. 27 (Mily.), dated 15th October 1885, paragraphs 3 and 4.

To Secretary of State, No. 156 (Mily.), dated 4th October 1886, paragraph 6.

From Secretary of State, No. 24 (Mily.), dated 27th January 1887, paragraph 2.

Telegram from Secretary of State, dated 8th July 1887.

of 11th idem, and to the Despatches and telegram marginally noted, we have now the honour to lay before Your Lordship the information which has been compiled under our instructions regarding various methods of turning, crossing, or piercing the Amran Range, together with our conclusions on the subject.

2. Accompanying this Despatch is a summary (enclosure No. 2) of the steps which have been taken by us since the year 1879 to ascertain the most practicable way of obtaining railway communication between the east and the west of the range, and it therefore suffices here to remark that the various alternatives appeared to us, after much investigation, to be reduced to three, *viz.* :—

No. I.—From Gulistan Karez, *via* the Gwaja Pass, to our frontier near Gwaj with a maximum gradient of 1 in 25, to be worked on the Abt System.

No. II.—From Killa Abdulla to a point on our frontier a little beyond Chaman, *via* the Khojak Pass, having similar gradients to No. I., and also to be worked on the Abt system.

No. III.—Between the same points as No. II, and also *via* the Khojak, but without the Abt or any other special system for working, the gradients being limited to 1 in 40, which an ordinary engine can work over without difficulty.

3. A report by the Engineer-in-Chief, Mr. F. L. O'Callaghan, C.I.E. (enclosure No. 3), discusses in considerable detail the various points connected with these three projects; and appended to this report are abstract estimates giving the cost of each, as also that of temporary lines which it is proposed to construct in connection with Project No. II or III, should either of these be decided on so that railway communication may be promptly established whilst the long tunnel involved in either of these projects is being made.

The projects each provide for a double line.

This report and the estimates have been discussed fully in a Joint Memorandum drawn up by our Consulting Engineer for State Railways (Mr. G. L. Molesworth), our Director General of Railways (Colonel Conway-Gordon, R.E.), and our Secretary in the Public Works Department (Colonel Pemberton, R.E.), which forms enclosure No. 4 of this Despatch.

An Appendix to that Memorandum gives in a convenient form the details of the cost of the three projects viewed from various stand-points.

4. It will be seen that notwithstanding the additional time required for the completion of that project, and its greater cost, and although it involves a tunnel more than 4,000 yards in length, Mr. O'Callaghan and the officers who have drawn up the Joint Memorandum are unanimously in favour of project No. III, which, starting from the present terminus at Killa Abdulla, pierces the range at the Khojak, and eventually reaches a point near our frontier three miles below Chaman.

5. This project is estimated to cost about 125 lakhs of rupees, of which more than 23 lakhs have already been expended on the permanent-way, which was pro-

vide in 1885-86 as a part of the frontier reserve material, leaving nearly 102 lakhs for future outlay.

6. After giving due consideration to the various points brought forward with regard to each of the projects, we have arrived at the same conclusion, and recommend project No. III for adoption.

7. The reasons which have led us to this conclusion are indicated in the Report and Memorandum above referred to, but will here be briefly summarised.

8. In the first place, it has to be noted that on emerging from the range, either of the Khojak lines is 18 miles nearer to Kandahar than a line *via* the Gwaja, thus giving so much less of new line to be constructed at a time when every day will be of importance, and so much shorter distance to be worked over eventually between Gulistan Junction and Kandahar.

9. Again, if a line were to be constructed to Gwaja, the terminus would be, at most, only four miles nearer Kandahar than the present terminus at Killa Abdulla, so that traffic coming by road from the west would probably still take the rail at Killa Abdulla rather than at Gwaj, thereby securing the advantage of a railway journey shorter by  $22\frac{1}{2}$  miles to the Junction at Gulistan, and the avoidance of an unfrequented desert route.

Thus a line to Gwaja would probably get none of the traffic between Kandahar and Biluchistan, whilst one by the Khojak would probably supersede the road entirely.

10. In length of line to be eventually worked from the common point of Gulistan Junction, should the railway be extended to Kandahar, the Gwaja route is  $17\frac{1}{2}$  miles longer than project No. II, and  $13\frac{1}{2}$  longer than project No. III.

11. On the other hand, the Gwaja project is estimated to cost, including past outlay, about  $25\frac{1}{2}$  lakhs less than project No. II, and more than 32 lakhs less than project No. III, to the terminus in each case on the west of the range. If, however, the cost of the extension to Mian Baldek be added in each case, the saving is reduced to less than 7 and 14 lakhs in the respective cases.

12. The Joint Memorandum further shows that if the cost of working the extra length on the Gwaja route be capitalised and added to the estimated cost of that route, then project No. II will cost nearly  $4\frac{1}{2}$  lakhs less than No. I, and No. III only  $5\frac{1}{2}$  lakhs more.

It may be considered that much importance should not be attached to this argument, as the extension will not be made until the necessity for doing so arise, and in the meantime should one of the more expensive lines be made, interest on the additional capital will be incurred. The time at which the necessity may arise being uncertain, the matter cannot well be reduced to figures, but the point noted vitiates to a certain extent the argument adopted in the Joint Memorandum. We think, however, that in balancing the advantages and disadvantages of the various routes, due weight should be given to the fact that an additional length of from  $13\frac{1}{2}$  to  $17\frac{1}{2}$  miles will be caused by the adoption of the Gwaja route, should the line be eventually extended to Kandahar. Moreover, if, on the adoption of the Gwaja route, the traffic should prefer to come to Killa Abdulla, as anticipated in paragraph 10, the unremunerativeness of the Gwaja line would cause a heavy loss on it from the outset, which would not occur in the other case.

13. Other points in favour of the Gwaja route are, that both the cost and the time required for execution are less uncertain than on either of the other routes, in consequence of the absence of any long tunnel; and also that, so far as can be anticipated, the time required for the completion of the through line will be somewhat less than in either of the other cases.

On the other hand, however, by an additional expenditure of five to six lakhs of rupees, it is estimated that a temporary communication over the Khojak can be established, by a combination of Abt racks and rope-inclines, within a year. This would neutralise any advantage of the Gwaja in point of time. The temporary

rope-inclines would be capable of transporting 40 tons per hour over the summit, without transshipment. Moreover, these temporary lines might be doubled in case of emergency.

14. Having regard to these considerations, we have arrived at the conclusion that the advantages of the Khojak routes, as compared with the route *via* the Gwaja Pass, outweigh the advantages, and that it only remains to consider which of the two Khojak routes is the preferable.

15. On this point we consider that the advantage of being able to take over the Pass the same train loads that have been brought from Sibi, with the same class of engine, and thus to have the whole of the best types of 5' 6" gauge engines in India at our disposal for use as far as the ultimate terminus of the line; also the greater degree of safety, and the absence of special and novel appliances, so greatly outweigh the comparatively small extra cost involved (under seven lakhs of rupees, or less than six per cent. on the whole estimate), that we have no hesitation in recommending project No. III for adoption.

16. As regards the Nushki route, we have no further information than that which is contained in the appended summary and its enclosures, which formed the grounds for the opinion we held with regard to it in 1885.

From these papers it is clear that to reach Mian Baldek, some 232 miles of new line will have to be constructed as against 54 by project No. I, 32½ by project No. II, and 37 by project No. III. The cost of the extra distance by the Nushki route cannot be estimated at less than 1½ lakhs of rupees per mile, and the extra length of line to be worked between Sibi and Mian Baldek would be from 70 to 100 miles, according to the route from Sibi which might be adopted.

We are unanimously agreed that on this account alone, even if it could be shewn that easy gradients are feasible, which has not yet been done, the Nushki cannot come into competition with any of the others as a line to Kandahar.

We may add that the greater part of a line *via* Nushki would lie in foreign territory, and that difficulties are anticipated from the sand over which a portion of it will be made, and from the absence of labour and scarcity of water.

We append a Minute by our Hon'ble Colleague Sir Theodore Hope, the Member in charge of the Public Works Department, explaining his reasons for concurring in this paragraph.

17. It is, in our opinion, of the first importance that we should have our railway complete as far as possible within the limits of our own frontier, before any complications arise beyond it.

While we thus strongly urge that there should be no delay in the completion of the railway to the limit of our frontier on the western side of the Kwaja-Amran Range, we have under our consideration the question of undertaking a complete survey of the country between Quetta and Nushki, in view of a distinct object, namely, the possibility of a railway being at some future time constructed westwards. His Excellency the Commander-in-Chief is strongly of opinion that we shall find eventually that a line of railway in the direction of Nushki is essential for the security of the southern flank of our line of defence.

18. The estimate for the project No. III, which is recommended by us, amounts to Rs. 1,25,02,590, to which a sum of Rs. 6,09,380 will have to be added for the temporary lines in connection with it. Of the former sum, about 23½ lakhs have already been expended in purchase of permanent way, as explained in paragraph 6 above, leaving a future cash outlay of about 108 lakhs.

If it should be determined by Your Lordship that work should be commenced at once, the outlay this year would not exceed six lakhs, which we can provide out of our Reserve for Military Railway; the expenditure in 1888-89 is estimated at 58½ lakhs; of the remainder, 37 lakhs would be required in 1889-90, and 6½ lakhs in 1890-91.

19. We hope that this Despatch, together with the Report of the Engineer-in-Chief and the Joint Memorandum, will be found to afford full materials to enable Your Lordship to come to a decision on the subject, and we have only to remark in conclusion that it is desirable that this decision may be communicated to us as soon as practicable, for though work in the tunnel and in the shafts connected therewith can be continued in the winter months if a fair start be made whilst the weather is comparatively mild, as in the month of November, yet, should orders not be received by us till December, little could be done before the cold abates in April.

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*Minute by the HON'BLE SIR THEODORE C. HOPE, dated 24th September 1857.*

The decision of the Council regarding the Nushki route has been given in paragraph 17 of the Despatch to which this Minute is appended; but I feel it incumbent on me to state fully the reasons why that decision has my support, and to make clear why a detailed survey of the route has not been made.

2. Taking the latter point first, the opinion adverse to the route, which was arrived at in November 1855, rendered it unnecessary for the Public Works Department to take further steps for its investigation unless expressly directed to do so by the Government of India, which they never have been, though the general question of the Amran transit has been formally considered on more than one occasion. Moreover, I have always held that we have as much information regarding it as is necessary for us, in order to compare it with other routes as a means of reaching Kandahar. We have a reconnaissance of the first 82½ miles made by General Browne himself, with the aid of two other officers, comprising descriptive report, plan and barometrical section (Proceedings R. C., October 1855, Nos. 170-72). We have a reconnaissance of the last part of the line, between Sir Poti and Argutai, by Mr. Graves (Proceedings R. C., February 1856, No. 14), thus leaving only 35 miles in the centre unexamined, but pretty well known in general character. We have also an elaborate memorandum by General Browne, contrasting the Nushki line (with revised rough estimate) with five other projects for crossing or piercing the Amran. We have also the Conference at Pishin referred to in paragraph 8 of Enclosure No. 2, and a full summary of the whole case. The result is that General Browne himself puts the Nushki line at 169 miles, costing Rs175 lakhs to Argutai; only, whence 31 miles more must be traversed to reach a point on the road to Kandahar common to all projects, thus making 200 miles, to cost 206 lakhs at General Browne's rates; and that the sufficiency of both these figures is doubtful.

To this I would add that, supposing further surveys established that the Nushki line could be made with even lighter grades than the ridges to be crossed are known to postulate the additional length of at least 107 miles, the consequent additional cost of at the very least as many lakhs, and, above all, the fact of the line being *only single*, must render the final judgment on it unfavourable, as compared with either the Gwaja or Khojak routes to Kandahar. In the face of these considerations, which have been known throughout, I do not think that the heavy extra cost of a detailed survey would have been justifiable.

Mr. Molesworth, also, has expressed the opinion that, even were the line to prove as favourable as General Browne anticipates, the extra length and the difficulty of guarding it would render it prohibitory as a line from Quetta to Kandahar; and that the information at our disposal is sufficient, without further detailed survey, for arriving at the conclusion that the scheme for reaching Kandahar by turning the Amran Range is impracticable.

3. In corroboration of this conclusion, it may be sufficient that I should refer.



to the map in accompaniment (D) of the Summary, which is General Browne's and summarise the principal points of objection as follows:—

- (1) The distance from Quetta (Baleli Junction) *via* Nushki to the terminus of the Gwaja route is put by General Browne at 169 miles, and will be *at least* that. To Mian Baldak it is 200 miles. The distance from Quetta to the same point by the Gwaja route is only 104½ miles, but by the Khojak route it is only 91½ miles. There is thus a difference of 95½ miles in favour of the Gwaja and of 109½ in favour of the Khojak.
- (2) In the case of the Nushki route, the whole 200 miles have to be newly constructed; whereas in that of the Gwaja, the entire distance except 5½ miles is already covered by rail and fit for traffic. Compared with the Khojak route, it is at a still greater disadvantage, as only 37 miles remain for construction.
- (3) The Nushki is *not* "little more than a surface line," as General Browne calls it in one place, but rather "scarcely a mountain line," as he describes it in another. His memorandum of 9th November 1885 (accompaniment (E) to Summary) shews that it has total rises and falls of 5,850 feet *via* the Darwaza line and Nishpa Kotal, and 5,380 feet *via* Baleli. This is at least as much as on the route from Quetta *via* Killa Abdulla and the Khojak, where the similar figure is 5,380 feet. Mr. Molesworth, also, points out that the route involves steep gradients to be worked with heavy brake power.
- (4) The Nushki will be by no means easy and cheap to construct, maintain, or work. Beyond the rises and falls which occur whether the line to Nushki be taken off from Quetta itself, from Baleli, or from the alternative point between Darwaza and Quetta, lie 93 more miles along the edge of the Registan desert, and traversing all the waterway of the *talus* of the Amran. Moving sand, scarcity of water, absence of population, with abundant bank-cutting and cross-drainage provision will all have to be encountered (see Mr. Graves' report No. 14 in accompaniment (E) to Summary).
- (5) In carrying power, the line will be limited both by its gradients of about 1 in 55 to 60, which Mr. Molesworth deems inevitable, and by its being a *single* line, while the Gwaja and Khojak lines are double. The grounds on which General Browne has based his calculations in this respect were fully dealt with by the Committee (accompaniment (H) to Summary), and it will be even liberal to apply to it their ratio, given in paragraph 14 of the Summary, of 12 full trains daily each way, compared with 27 by the Gwaja or Khojak routes. Supposing that the gradients were to be reduced to the utmost, this could only be by considerable lengthening and consequent increased cost.
- (6) As to cost, General Browne's own estimate is 175 lakhs of rupees or about a lakh a mile. This Mr. Molesworth deems too sanguine. I may add that our simple lines on the Pishin plateau have cost as much or more, that Mr. O'Callaghan's rough estimate of the extension of the Gwaja line to Ashik, which possesses no expensive features absent in the Nushki, is one lakh per mile, and that he considers 1½ lakhs to be a very low mileage rate for the whole line, which would give for the latter a total cost of 211 lakhs for the 169 miles only. Taking the whole distance to Mian Baldak at this rate, capitalising extra working expenses, the total cost of the Nushki would be 250 + 69 = 319 lakhs, whereas that of the Khojak 1 in 40 line, including the temporary line, is 141 lakhs, giving a difference of 178 lakhs in favour of the latter. Again, the total permanent-way required, including 10 per cent. for

sidings, in order to reach Kandahar, would be 297 miles. Our Reserve permanent-way is 135 miles; so that 162 miles more would have to be purchased for the Nushki route, whereas by adopting the Khojak we should not need, at most, above 10 miles more than we have got.

- (7) As to time in construction, this could not possibly be put at less than three years. General Browne says 2 to 2½ years, but the truly "surface" Sind-Sagar Railway has required that time. Half the distance lies in the desert tract described above in (4). This can only be got at by either deferring its commencement till the first section as far as Nushki is open, or by making a temporary tract over the Gwaja and constructing both ways from Gwaja, which would be a very costly method. Thus, through communication would not be obtained even as soon as by the Gwaja route, or probably nearly so quickly as by the Khojak.

- (8) The political difficulties of about 90 miles of the Nushki route lying in Afghan territory, and the financial and administrative ones of guards and possibly a cantonment being needed there, &c., have also to be borne in mind. Even if surmounted, much delay in negotiations with the Amir, and much political risk of difficulties and misapprehension in other quarters, must occur before actual work could be started.

4. On the whole, it seems that the Nushki route, even if the last-named difficulties were overcome, would give us in no shorter time less than half the carrying capacity obtainable from the Arman routes on the Abt System, and probably at double the cost.

If, however, we substitute for the Abt routes the new project on a grade of 1 in 40, available for ordinary engines, greatly exceeding them consequently in carrying power, and estimated at only 141 lakhs of rupees, including past outlay and temporary lines, which Mr. O'Callaghan has matured, the comparison becomes even more completely unfavourable to the Nushki route.

5. The preceding remarks have no application to the project for a distinct railway from Quetta to the Nushki plain only, with the view of securing the southern flank of our line of defence. This Mr. Molesworth deems likely to cost about 100 lakhs. Its detailed survey would cost about Rs. 1,13,000.

Into this question I am not called upon to enter here. In accordance with the recognised object of the present enquiry from the first, I have from first to last considered the Nushki only *as an alternative for reaching Kandahar*. For this object it is totally unsuited.

6. I believe that those who most strongly advocate a distinct railway from Quetta to Nushki only for the object above indicated would admit that the project cannot claim precedence over that of effectual provision for our direct communication towards and (when need arises) up to Kandahar. This communication cannot be considered as in an even moderately safe condition until we have a railway to our frontier at Chaman. To lay line from Chaman to Kandahar on an emergency, leaving the break of the Arman Range between Killa Abdulla and Chaman, would be a most difficult and costly (though of course not impracticable) undertaking. When achieved, the line would have to be supplied with independent stock, workshops, &c.; it would be a comparatively indifferent agency for suddenly reinforcing the army after either a victory or a check, while in the event of a reverse it would be an imperfect means of retreat, and its stock must be abandoned to the enemy. Animal carriage would, on emergency, be a miserable and costly substitute for a railway to the Kandahar base.

7. I am no advocate for ever advancing beyond our Chaman frontier unless we are compelled to do so by the course of events. But for this very reason we ought to make our own position within that frontier complete, so that our advance, if the day for it comes, may be prompt, effective and capable of securing within an

extremely short time the full advantages of the measure. Therefore, I advocate undertaking the line from Killa Abdulla to Chaman without delay.

*Summary prepared in the Public Works Department of the Proceedings in connection with the preparation of Projects for crossing or piercing the Amran Range.*

The passing of the Amran Range was a portion of the project for a railway to Kandahar, taken in hand during the Afghan war, and extensive surveys were made in 1879-80 by Captain W. W. B. Whiteford, R.E., and other officers. The subject was also discussed in minutes and reports by Sir Richard Temple, Colonels de Bourbel and Lindsay, and Mr. Molesworth. Matters had not proceeded beyond the provisional selection of a line from Gulistan Karez over the Gwaja Pass, and down by the Wach Darra Valley to Gwaj, with its extension to Kandahar when political events led to the abandonment of the undertaking.

Its resumption dates from the frontier military preparations of 1885, and the telegrams quoted in the margin. Shortly afterwards, in Despatch No. 112, Military, dated 10th July 1885, the Government of India forwarded a recommendation of the Defence Committee for "the immediate construction of a tunnel through the Amran Range, provided that an alternative surface line cannot be found," with an opinion that "it is unquestionably necessary to be ready to take the railway either round or through the Amran Range, so that it may be in our power to carry out the extension of the line to Kandahar in the event of circumstances calling for such a measure." In these views the Secretary of State expressed entire concurrence in a Despatch, No. 271, Military, dated 15th October 1885.

" \* \* \* Under present circumstances, we consider it indispensable to extend this line\* from Quetta back to top of Bolan Pass and also from Shebot to foot of Amran Range. Likewise, we think it advisable that permanent-way materials, broad gauge, complete for extension to Kandahar, should be stored in reserve in Pishin without delay \* \* \*"

*Telegram from Secretary of State, to Government of India, dated 6th May 1886.*

"Yours 1st. Bolan Railway works and Sind-Pishin extension approved. Material for these and for proposed reserve stores will be supplied as soon as practicable."

Subsequently, progress was reported (No. 156 M., dated 4th October 1886, paragraph 6), and the reply which is quoted in the margin was received in January last.

More recently, the Secretary of State's Despatch No. 128 M., dated 12th May 1887, and telegrams of 8th July and 4th August last, indicate a desire for an early settlement of the question. From the above it will be seen that Kandahar has been the objective point prescribed throughout, towards which the construction of the railway up to the limits of British territory and arrangements for its prompt extension when necessary, with material to be stored beforehand, were to be directed.

*Para. 2 of No. 24 (Mily.) from Secretary of State, dated 27th January 1887.*

"I trust that no time will be lost in carrying out the surveys necessary to enable you to arrive at a satisfactory decision as to which line will be more suitable for the prolongation of the Sind-Pishin Railway, and as to whether a surface line or a tunnel will be the best means of crossing the Amran Range in the direction of Kandahar."

2. In pursuance of the decision of May 1885, instructions were issued for a thorough investigation, under the orders of Brigadier-General J. Browne, the Engineer-in-Chief of the Sind-Pishin Railway, as to whether, in extension of the Sind-Pishin Railway from Shebo, the Amran Range could be satisfactorily crossed or pierced anywhere from the

Accompaniment A.—Nos. 16 and 27.

\* The Sind-Pishin Railway.  
† Otherwise called Saiaid Hamid, the locality near the Pishin Lora river, up to which the railway had then been sanctioned by Secretary of State's Despatch No. 76 Railway, dated 3rd July 1884.

Khojak to the Gwaja Passes, or could be turned further west, in the direction of the Bed Pass and Spinakula. General Browne was also permitted, at his own request, to make a reconnaissance of a turning route running direct from Quetta across Sharod and Shorawak to near Nushki, and thence up the west side of the Amran to Argutai or Gwaj.

Accompaniment B.—Proceedings R.C., August 1885, Nos. 1-15.

3. General Browne subsequently reported that the Bed Pass route was impracticable, but that a line from near Quetta to Nushki, whence it would run up to Argutai, had easy grades and little heavy works, and possessed various strategical advantages, especially with a view to extension to the

Accompaniments C. and D.—Proceedings R.C., October 1885, Nos. 17-18 and 170-172.

Helmund. He submitted a descriptive report and plans of the line and its extensions, with a barometrical section from Quetta to Nushki, and he calculated that its cost (169 miles long) would be 146 lakhs, and that a line of 34 miles, piercing the Khojak, would cost as much and take double the time to construct. His views will be found in his letters of 4th July and 16th September, and in his telegram of 24th August 1885.

4. Brigadier-General Browne's scheme was considered in the Public Works Department, and by the Military Department with the aid of His Excellency the Commander-in-Chief.

The Hon'ble Sir Theodore Hope held that the difficulties and cost of the Nushki route were under-estimated, while those of piercing the Khojak were magnified to an extent quite incomprehensible, and incompatible with other professional opinions on the subject.

On strategic grounds the late General Wilson, then Military Member of Council, concurred in the view of Colonel Sanford, then Deputy Quarter Master General, and now Inspector General of Military Works, that Kandahar, and not Herat, was the point to which railway communication was imperative, and that the shortest line to the former would be the easiest to protect.

5. Brigadier-General Browne was consequently instructed to confine his attention to the surveys for crossing or piercing the Range, and to have the question ready, if possible, for discussion on the occasion of a visit to be paid to Pishin in November 1885 by Sir Donald Stewart, General Wilson, and Sir Theodore Hope.

His Excellency Sir Donald Stewart subsequently expressed his opinion that the route by Nushki was out of the question, but that, if the thorough examination of the Range should show that it could be turned altogether by a more economical route, and that the expense of driving a tunnel through it would be enormously in excess of what had been supposed, then it would be a question whether it would not be expedient to give up the idea of a continuous line of railway, and work the traffic across the Range by road.

## II.

6. In accordance with the above arrangements, Sir Donald Stewart and Sir Theodore Hope, accompanied by Sir Thomas Baker and Major Brown, R.E., Brigadier-General Browne, and Colonel W. S. Trevor visited together Quetta, Bostan Junction, and Saiad Hamid, the site of the contemplated entrenchment. Sir Theodore Hope, Colonel Trevor, and General Browne then spent four days in the Amran Range examining the various projects with the officers engaged on them.

7. On the 9th November Sir D. Stewart, General Wilson, and Sir Theodore Hope conferred about the whole matter, and embodied the result in formal proceedings, noted in the margin. The information available up to that date may be briefly summarised as follows :—

Accompaniment E.—Proceedings R.C., February 1886, Nos. 4-23, vide No 6.

1st.—As to turning the Amran Range (a) the route from Gulistan *via* Mangal-zai down the Tang and Lora valleys to the mouth of the Lora, near the

Registan, had been explored and found impracticable (No. 13 in same Proceedings); (b) the route from Qnetta by the Red Pass and Spinakula had similarly been condemned; (c) the

portion of the Nushki route between that place and Argutai or Gwaj had all been examined, except a section beyond Ya Mahomed at the lower end, possessing no special features (No. 14); (d) the Nushki route estimate had been raised by General Browne from 146 to 175 lakhs (No. 7).

2nd.—As to *crossing* the Range, it was established that this was feasible only in the locality of the Gwaja Pass, three routes being possible; (e) from Gulistan by the Khurgai and Shaista valleys into the lower Wach Darra Valley (No. 8); (f) from Gulistan to the Top Kotal and thence northwards to Tur Tang (Nos. 7 and 17); (g) similarly to the Top Kotal and thence westwards down the Wach Darra to near Argutai (Nos. 7, 15, and 16).

3rd.—As to *piercing* the Range, schemes for this under the Gwaja proved impracticable (Nos. 9—12); the Khojak Pass was reported by General Browne to be very unfavourable, but the Sanzal Pass offered fair prospects of a satisfactory project being developed (Nos. 18—20).

4th.—It was quite impossible to say, with any approach to certainty, whether the crossing in one direction or the piercing in another would afford the better grades, or be the more economical, until the projects had been exhaustively matured, surveyed, and estimated.

8. At the Conference (accompaniment E, No. 6) His Excellency Sir D. Stewart and General Wilson concurred in the opinion that—

“The project for a line round by Nushki is entirely out of the question. Such a line would be very long; it would weaken our flank and open a road for the enemy; it would be troublesome to guard, and perhaps necessitate a new cantonment towards Nushki; while finally, the political objections to attempting to carry a line for such a distance through the Amir's territory, and to the location of a British cantonment there, are probably insuperable.

“On purely strategic grounds, a line emerging from the range at Chaman is preferable to one emerging near Gwaj or Argutai, though this advantage is not such as to warrant any very much larger outlay in order to secure it.

“The line should be double, if possible, rather than single, but estimates of both should be made, in order to judge whether the advantage would warrant the additional cost of the former.”

In the political objections to the Nushki route Sir Theodore Hope concurred with his colleagues; the military considerations he left to them in both cases.

### III.

9. In pursuance of the decision at the Conference, orders at once issued (accompaniment No. 23) for maturing the Gwaja projects (f) and (g) and the Sanzal projects, with tunnels of lengths

Accompaniment F.—Proceedings R. C., March 1886, Nos. 5—21.

varying from 1½ to about 4 miles. Some further particulars were accordingly reported, and others were laid before the Committee to which we are about to allude.

Note.—The numbers within brackets refer to the numbers in the Proceedings quoted in the margin.

As the adjudication between these projects was a matter of considerable importance, involving questions of great engineering difficulty, it was, on 4th February 1886, referred, so far as its engineering and financial aspects were concerned, to a Committee of experts composed of—

Accompaniment G.—Proceedings R. C., February 1886, Nos. 57—66.

Major-General H. F. Hancock, R. E., who had twice officiated as Director General of Railways.

Mr. G. L. Molesworth, C.I.E., the Consulting Engineer to the Government of India for State Railways.

Mr. F. L. O'Callaghan, C.I.E., one of the most distinguished Civil Engineers in the Public Works Department who has had much experience in construction and had just made the Bolan Railway.

Accompaniment H.—Proceedings R.C., June 1886, Nos. 66—94.

10. This Committee visited the Amran Range in March 1886, and submitted in April an elaborate report, with two supplementary ones, the general purport of which was—

- (1) that of the Gwaja routes the Gulistan-Wach Darra was the best;
- (2) that there was not much to choose between the Sanzal projects, and all had the disadvantage of the construction of a road over the range being difficult;
- (3) that no proper examination of the Khojak Pass had been made, but that observations of their own showed that surveys might give better results than those of either of the Sanzal lines;
- (4) that the Gwaja route *via* the Wach Darra had the advantage over the others on engineering grounds, as it afforded peculiar facilities for speedily obtaining through communication by means of temporary lines, and could be made permanently in less time; on the other hand, it lay under the disadvantage of being less direct, and longer by some 25 miles, and of being exposed to attack from the Registan between its debouchure and the point, common to all the lines, on the Kandahar road.

At the same time, the Committee stated that the projects must be really worked out in detail before they could give any definite opinion as to cost, and that the estimates they submitted were mere rough calculations, for purposes of comparison alone. The whole of the lines under consideration are shewn in the map appended to the Report, and still better in the map with accompaniment L.

11. In accordance with the Committee's recommendations fresh orders (accompaniment H, No. 86) issued to General Browne in April 1886 for the thorough investigation and completion of the following projects:—

- (a) for a double line from Killa Abdulla to Chaman under the Khojak, with a tunnel about  $2\frac{1}{2}$  miles long, at a point where the Committee had deemed it feasible, and with approaches on a grade not exceeding 1 in 40;
- (b) for a single line between the same places *via* the Sanzal, with limiting gradients of 1 in 75, and a tunnel about  $3\frac{1}{2}$  miles long;
- (c) for a double line from Gulistan *via* the Top Kotal and Wach Darra Valley, *i.e.*, by the Gwaja route.

These projects were ordered to be submitted by the 1st August, which time the Committee deemed sufficient.

12. The projects for the Sanzal and Gwaja reached the Government of India complete on the 18th October 1886. Regarding the Khojak, the information supplied by General Browne was summarised in a communication from him dated 14th December last (No 187 in same Proceedings). The plans and sections followed on the 1st February 1887, but the estimates were not sent till 19th March, and then without any full explanation as to the action taken.

Accompaniment K.—Proceedings R.C., April 1887, Nos. 103—105.

The information received up to the end of the year was laid before the Committee, and they submitted a further report on 18th February 1887.

13. As regards the Khojak, they stated that no fresh data were afforded, as General Browne appeared to have condemned a low level line such as they suggested,

and given his attention to surveying a high level one, to prove the impracticability of which no survey was necessary.

14. As regards the Sanzal and Gwaja, the Committee did not concur with General Browne's estimates for tunnelling, but found no guide for checking them in other respects, and therefore drew up fresh, rough preliminary estimates for purposes of comparison only. They also estimated the carrying capacity of both lines very carefully from facts obtained from the Great Indian Peninsula Railway relating to the Thal and Bhore Ghâts. Their final figures for the two are—

	Ruling Gradient.	Length, Miles.	Miles, Tunnel.	Cost, Lakhs.	Capacity, Full trains each way daily.
				₹	
Sanzal, single line . . .	1 in 75	37	3½	169	12
Gwaja, double line . . .	1 in 45	33½	1½	191½	27

Considering that a double line by the Gwaja would thus carry more than twice the amount of traffic which could be carried over a single line by the Sanzal, and could, moreover, be completed for traffic in a far shorter period, the Committee unhesitatingly gave the preference to the former route.

15. At the same time they brought forward an entirely new suggestion, *viz.*, that the "Abt System of ascending steep inclines," by means of rack and pinion, which Mr. Molesworth last year reported, after personal inspection, to be in successful use in the Hartz mountains, might be adopted on the Gwaja. They held that with the aid of this system "a very much shorter and cheaper line equally effective as a carrier" might be obtained by following, as far as practicable, the valleys leading up to the Gwaja Pass, with a ruling gradient of 1 in 25.

In order to verify this opinion, they recommended that traverses should be run up the Gwaja valleys, and that no time should be lost in gaining experience of the Abt System by trying it on the Bolan section of the Sind-Pishin Railway.

16. On full consideration of the whole question by the Government of India in February last, both the Committee's recommendations were adopted. The experiment in the Bolan was arranged for separately, as was reported in the Despatch quoted in the last preceding paragraph, and the traverses up the Gwaja were ordered, with similar test of the Sanzal and Khojak, if preliminary reconnaissances should offer a reasonable prospect of success (accompaniment K, No. 370). These new Amran investigations were placed under Mr. F. L. O'Callaghan, C.I.E., who had lately succeeded General Browne as Engineer-in-Chief of the unopened portions of the Sind-Pishin Railway. He commenced operations with his staff about the middle of March.

#### IV.

17. Mr. O'Callaghan made trial surveys by three routes, *viz.*, the Gwaja, Sanzal, and Khojak, of which the second was soon found to possess no advantage over the Khojak, and in May last permission was given to suspend further surveys and estimates for a line by that route, unless the Engineer-in-Chief should see reason to anticipate better results than his latest reports indicated.

This survey was consequently abandoned, and in June the projects for the Gwaja and Khojak routes with gradients of 1 in 25 were considered in Council, when an order was passed (on the 22nd June) that surveys and estimates should also be prepared for a project with a ruling gradient of 1 in 40 *via* the Khojak, the Engineer-in-Chief having stated that his recent investigations appeared to show the practicability of such a project,

This project has now been submitted in full detail, together with the two previously submitted, complete detailed estimates for all three being supplied.

*Note.*—The numbers within brackets refer to the numbers in the Proceedings quoted in the margin.

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*Report by F. L. O'CALLAGHAN, Esq., C.I.E., Engineer-in-Chief, Khwaja-Amran Surveys, dated 24th August 1887.*

#### Report on projects.

The projects for carrying the extension of this railway through the Khwaja Amran Range on the North-West frontier of Biluchistan are three in number, and are shown on the accompanying index map.

Owing to the severe gradients necessary, the estimates have been all prepared for a double line of rails on the standard Indian gauge (5' 6"), so that the carrying capacity of the line ultimately chosen may, at least, be equal to that of the different lines converging on Bostan junction, near Quetta.

Project No. 1 is for a line of railway from Gulistan on the east side of the range, *via* the Gwaja Pass and Wach Darra ravine, to Gwaj near the western mouth of the pass. The steepest gradient on this line is 1 in 25, which necessitates the introduction of the Abt System of rack rail. The length to construct is 26 miles, and the estimated cost R92,88,753.

Project No. 2 is for a line of railway from Killa Abdulla, on the east side of the range, to a point a little below Chaman Fort on the west side, *via* the Khojak Pass, with a maximum gradient of 1 in 25, also requiring Abt rack rails; this project involves the construction of a tunnel about 2 miles in length. The length to construct is 22½ miles, and estimated cost R1,18,11,536.

Project No. 3 is for a railway between the same termini as for No. 2, also *via* the Koja Pass, but with a maximum gradient of 1 in 40, thus doing away with the necessity for special rack rails or engines. The length to construct is 27 miles, and estimated cost R1,25,02,590. This project involves a tunnel about 2½ miles in length.

The following is a detailed description of each project :—

#### PROJECT No. 1.

This project begins at the present end of the Gulistan branch of the Sind-Pishin Railway 3½ miles from Gulistan junction, and at 4,918 feet above sea level. At mile 5 from the junction it enters the valley of the Gulistan Darra, up which it is carried. For 9 miles the ruling gradient is 1 in 40, involving light earthworks, and numerous small bridges to cross the waterways from the adjacent hills. At mile 12½ is Top-Wurr, level 5,864 feet, at the mouth of the Top-Darra. Here will be a small changing station for Abt engines, as from this point the inclines become more severe. Large station accommodation is not required, for there will be no re-marshalling of trains, the same weight of train that can be brought up from Gulistan junction by two L class engines being taken on by two Abt engines.

Above Top-Wurr the Gulistan Darra narrows considerably, and the inclination of the bed becomes steeper and very irregular, sudden rises of five or six feet occurring in several places. The formation therefore, instead of being kept about parallel to the bed of the stream, has to rise considerably above it at the lower part of the gorge, and, owing to the stream becoming more tortuous, the line has to cross and re-cross it four times. In this length a ruling gradient of 1 in 25 has to be adopted. At mile 14½ more open ground is reached, and short lengths of gradients easier than the maximum are proposed to suit the exigencies of the ground, but at mile 15, the gradient again becomes a maximum of 1 in 25 up to the summit (level 6,560 feet). Immediately on crossing the summit the line is carried under the ridge by a short tunnel, 520 yards in length, on a descending gradient of 1 in



40. From the western mouth of this tunnel to mile 19, where the line reaches the Spintiza plain, the earthworks are heavy and the gradient is 1 in 25. At mile 20 the gradient changes to 1 in 40, which continues to mile 22½; here the 1 in 25 gradient again commences, and is continued nearly to the terminal station at Gwaj.

From mile 20 to 22½ the earthworks are light, but the drainage from the ridge requires many openings to pass the water. Here the line crosses the Wach Darra to its left bank, on which side the provision required for drainage is much smaller. From this crossing to the end of the line works of all kinds are light.

The tunnel under the ridge is, as already stated, 520 yards in length. For some distance from each portal it will be in disintegrated clay slate, and these portions will have to be fully lined. There is no surface indication to show if the central portion is in more firm ground: therefore in the estimate lining for the whole length is allowed. In case this project is adopted, and the completion of the work is urgent, rock-boring machinery will be required, but not otherwise.

On this line there are no heavy works except the small tunnel in mile 17, and the earthwork in miles 16, 17, and 18. The largest bridge is that crossing the Gulistan Darra gorge above Top-Wurr, which consists of six spans of 40 feet.

Block signal stations are provided at miles 7, 16½ and 22½, besides the changing station at Top-Wurr.

A plentiful supply of water exists at Top-Wurr and for 2 miles above it, also at mile 22½ and at the terminal station at Gwaj.

Building materials are not readily procurable, though some good stone exists for works on the first few miles. For bridges it will probably be best to use concrete and iron only, but even then sand must be brought by rail for all works on the eastern slope. For other buildings, bricks, railed from Bostan, will be the cheapest material to use.

The probable time necessary for the construction of a double line of railway through the Gwaja Pass may be taken at 15 working months: 4 winter months, when work would probably be stopped, should be added to this, and therefore 19 months, or two full working seasons, may be taken as the period required. This time should be ample, provided no epidemic occur or war break out; either contingency would upset all calculations as regards time or money.

#### PROJECT No. 2.

This project begins about a mile south-east of the Killa Abdulla post, at the end of an altered length of existing main Sind-Pishin line; and for the first 10 miles is on gradients not exceeding in steepness 1 in 40. Of this length, mile 7 to mile 14\* is almost a surface line, but from mile 14 to the end the earthworks are somewhat heavier.

In laying out this latter portion the question to determine was, how much extra work was justified by the saving ensuing from the non-use of the Abt rack. Taking this and other considerations into account, such as facilities for procuring water, and tolerably level ground for a changing station, the site below Shumsh Khan Chowki was decided on as the junction for the 1 in 40 and 1 in 25 lines. The position of this station necessitates a reverse at the top of the 1 in 40 grade, but this is not objectionable, as the engines have in any case to be changed. From this station to mile 19½, an ascending gradient of 1 in 25, with Abt System rack rail, keeping close along the edge of the Khojak ravine, is proposed. Here the line enters the tunnel. The first half of this tunnel is on an ascending gradient of 1 in 1,000, and the remainder on a descending gradient of 1 in 40, the summit level being 6,460 feet above sea level.

From the western tunnel mouth the ruling gradient 1 in 25 begins, and is continuous to a point about 3 miles below Chaman, where a temporary terminus is

\* Beckoned from Gulistan Junction.

placed. From the tunnel mouth mile 21 to mile 25, there are heavy earthworks; then to mile 26 they are of a medium character; while the remaining length to the terminus is very light.

There are no heavy bridges on the line. The longest consists of five spans of 20 feet, near Killa Abdulla, and the highest, one span of 40 feet, in the 24th mile, but the nature of the country necessitates a large number of small openings in the form of pipes and culverts. There are also two lengths of "cut and cover" to pass water over cuttings, one in mile 20 and the other in mile 25.

The proposed tunnel begins at mile 19 chain 47, and ends at mile 21 chain 49, and is therefore 3,600 yards long, or  $2\frac{1}{3}\frac{1}{2}$  miles.

Two shafts are practicable, one 81 yards deep at 837 yards from the eastern portal, the second 72 yards deep at 630 yards from the western portal, the distance, between being 2,133 yards, or  $1\frac{3}{4}$  miles. The time necessary for piercing this length will be the full time necessary for completing whole project, and will be dealt with further on.

### PROJECT NO. 3.

This project begins and ends at the same points as No. 2, and takes the same general direction through the Khojak Pass, but the steepest gradient, being limited to 1 in 40, necessitates greater length, and somewhat different alignment in places. Up to mile 17 the line is identical with that for No. 2, but from that point it deviates to gain length, and the works become heavier; miles 17 to 19 form a long double horse-shoe curve, crossing the Khojak ravine above Shumsh Khan at a height of 57 feet. It then skirts the ravine on the opposite side to the line for project No. 2, to mile 19½, when it returns to the left bank, gradually approaching the bottom of the ravine, and enters tunnel at mile 20½, emerging again at 22¼ on the western slope of the range. From this exit it follows the same general course as project No. 2, but with somewhat heavier works, amongst others a short tunnel 240 yards long in mile 24, in place of the cutting proposed in the other project.

To gain length, it is taken further south across the Sunzal ravine, before turning back towards Chaman. After this turn it is clear of all spurs from the main range, and has no other heavy earthworks. Just below Chamaa Fort it again turns southwards for 1 mile to avoid the Khojak river, and then, at mile 31, turns northwards for the last time.

On the east side the bridging will be identical with that for project No. 2, except that the two extra crossings of the Khojak ravine have to be provided for, one by a bridge of 3 spans of 60 feet, the other by a bridge of 4 spans of 40 feet. On the western slope also the same drainage is crossed, and in addition, there will be required one bridge for the Sunzal river of 5 spans of 20 feet, and 1 of 3 spans of 60 feet.

The proposed tunnel is on the same alignment as that for No. 2 project, but at a lower level, and is 4,080 yards long, or 2 miles and 560 yards. Two shafts similarly situated to those for No. 2 project tunnel, but proportionately deeper, are obtainable: the first will be 102 yards deep, and 1,147 yards from the east portal, the second 97 yards deep, and 800 yards from the west portal, and therefore the same distance apart as in project No. 2. This gives the time necessary for completing this tunnel the same as for the shorter one, and as all other work can be completed much quicker than the tunnel, the time necessary for constructing this line will be the same as for the Abt project through the Khojak.

### *Main Tunnels.*

The main tunnels in projects Nos. 2 and 3 have already been briefly described: they are designed on the same centre line, and with the exception of the longer one being at a lower level, are precisely similar.

The cuttings at the ends will be in all four cases through deep beds of shingle, the deposits of the two streams leading from the Khojak summit. It may prove cheaper in the end to cover in certain lengths of these cuttings, and this is provided for in the estimate.

The strata through which the tunnel will have to be driven is clay slate, upheaved until the beds are nearly vertical, while the direction of the "strike" is almost at right angles to the centre line of the tunnel, a peculiarly favourable position for excavating the rock. The whole main portion of this range is composed of this same strata, and nowhere do the ravines, which cut deep into its flanks, show signs of any other description of rock. It may be therefore safely assumed that the mountain is clay slate throughout. The outside surface everywhere is disintegrated and weathered, consisting of loose friable material; but where streams of water have cut through this material, or where cuttings have been made, as those for the Khojak military road, hard blue slate is visible at a short distance below the surface, and it seems safe to infer that the interior is hard and compact.

Water will no doubt be met with in some quantity, judging from the fact that, even during the past exceptionally dry season, numerous small springs exist close to the top of the hills, shewing that probably there is a fairly good supply in the mountain.

On the whole it may be inferred that no exceptional natural difficulty would be encountered in driving a tunnel of either 2 or 2½ miles through this range, and in fact that the undertaking would, as far as physical features are concerned, be more favourable for prosecution than the average of such works.

The surface indication, as above described, would seem to show that the greater portion of either tunnel would not require masonry lining; and if this inference should prove correct, in the case of one of these tunnels being undertaken, the saving in cost will be considerable, for full masonry lining nearly doubles the cost of a tunnel.

In regard to the time which would probably be required to complete either of these tunnels, much will depend on the urgency or otherwise of the case.

Owing to the facility for sinking two shafts, which would be the same distance apart in either case (2,133 yards), the time for either tunnel would be about the same if shafts are used; otherwise the time may be taken in direct proportion to the length, or as 4 to 5 roughly.

For preliminary operations, such as shaft-sinking, excavating the cuttings at both portals, erection of machinery, &c., six months would not be too much to allow: then with proper appliances there is no reason why an average rate of progress of two linear yards per day cannot be obtained in each heading. This will give 550 days for the distance between the shafts, and therefore for the whole tunnel: and one-third to this for accidental stoppages and other delays, bringing up the time to 2 years and 6 months, as necessary for the completion of the work, including all preliminaries.

The most modern examples of machine tunnelling through hard rock, the records of which are complete and available, are first the St. Gothard. In this tunnel, notwithstanding its great length and the extreme hardness of the rock, an average progress of 3 yards per day in each heading was obtained during the last two years of its construction; again in the Keighley tunnel of the Great Northern Extension, in England, Colonel Beaumont gives as an average of what was done with his machine 35 yards per week, or 5 yards per day, through hard rock; while in a drainage heading through Halkyan mountain, the average speed was 20 yards per week, or nearly 3 yards per day. The Laveno tunnel, 3,210 yards long, was constructed in 16½ months, working from the ends only, or at a rate of nearly 3·2 yards per day at each face. Lastly, in the Aarberg tunnel the daily advance in each heading averaged from 3 to 6 yards.

From these examples it would be seen that the estimated 2 yards daily, in the

Khojak, with a large allowance for contingencies, should be well within the mark. To ensure however the full advantages being obtained from such appliances, or indeed to ensure their success, it is essential to have a thoroughly good staff of trained men to work the machines. It is not probable that work inside the tunnel would ever be stopped by the severity of the winter, and it will, in the case of execution of this work, be true economy to have a sufficient number of trained Europeans to work the machines and direct the native labour in the mining operations. Italians, Swiss, or Austrians can probably be obtained at lower cost than English workmen, and are usually more amenable to discipline, and less liable to give way to intemperance.

#### *Cost of Tunnels.*

The estimates for the tunnels are prepared on the supposition that the work will be done by the most modern appliances, and the greatest speed possible, there being no stoppages for want of funds, or from causes other than the natural difficulties of the works.

The following remarks made by Colonel Beaumont at the Institution of Civil Engineers give the opinion of an Engineer with very large experience in rock-boring machinery, and are most true: "If it is intended to drive cheaply by machine drills, a rapid speed is necessary. If the driving is slow instead of quick, the cost will be increased. To drive rapidly requires first-class machines, and a first-class staff of men accustomed to the work."

The annexed table gives the cost of a large number of tunnels in different countries, the average being £78 per linear yard, or, exclusive of the three great tunnels, £62-16 per yard.

The estimate for the Khojak tunnel, worked out on independent data, is £62-12, at current exchange. In the Arlberg tunnel the cost of the heading averaged £11-8-8 per linear yard. The estimate for the Khojak tunnel heading is £12-16. In the Arlberg, the average cost of enlarging the section was £38-2-6 per linear yard. The Khojak estimate is £41-4.

The Arlberg tunnel is quoted above as being the more modern of large European tunnels of which details of cost, &c., are available; but while the cost of this and other tunnels quoted below includes all plant and establishment, the prices for the Khojak tunnel, under the rules for estimating in force in the Public Works Department, are exclusive of these items.

The price allowed for sinking the shaft is at the same rate as for the advanced heading, and is in excess of the average cost of shafts in many American tunnels, where labour is exceptionally dear, but much depends on the quantity of water met with.

*Table shewing Cost of Tunnels in various Countries.*

Name of Railway.	Length in yards.	Average cost per linear yard.	Lined or otherwise.	REMARKS.
		£		
Buckhorn Western . . .	739	72	Full lined.	Through Kimeridge clay and loose rock.
Lyngate, L. and N. W. Railway	1,332	30	"	Through coal measures and soft and hard clay.
Netherton (Canal) . . .	3,026	50	"	Through trap and marl.
Lindal . . . . .	660	54	"	Through limestone.
Grandeaux . . . . .	438	60	"	Through rock.
Coruallax . . . . .	539	85	"	
Vanderaus . . . . .	1,007	37	"	
Val-de-travers—				
(1) Rock . . . . .	...	41	Partly	Through rock.
(2) Chalk . . . . .	...	49		Through chalk.
Marseilles . . . . .	2,730	73	Full lined.	Through limestone and clay.

Table shewing Cost of Tunnels in various Countries—continued.

Name of Railway.	Length in yards.	Average cost per linear yard.	Lined or otherwise.	REMARKS.
Baltimore—Ohio . . .	1,375	£ 48	Full lined.	Through sandstone and crumbling shale.
Ditto Potomac . . .	2,315	85	"	Through rock, clay earth.
Average of 256 American tunnels.	...	72	"	Through various strata.
Innsbruck Bozen . . .	724	61	"	
Ditto Mukhtal . . .	954	120	"	
Rivota . . . . .	868	78	"	Through slate and hard rock.
Mont Cenis . . . . .	13,846	225	"	Through slate and hard rock.
St Gothard . . . . .	16,295	143	"	
Arlberg . . . . .	11,146	108	"	
<i>India.</i>				
Magala, Punjab Northern State Railway, single line . . .	300	Rs. 500 =£40	More than half lined throughout.	N.B.—All above are for double line of railway. Through black limestone: much extra expense caused by want of money, and by having to pay for carriage and fixing "Beaumont's" machines when work was already half-done by hand.

*Rolling-Stock.*

For projects Nos. 1 and 2 this item will cost a large amount. These lines being of special construction, and requiring special engines to work them, cannot depend on the whole engine power of India as reserve in case of pressure, and must from the first be stocked with a sufficient supply to carry all the stores that may under any circumstances be brought up by the main line of the Sind-Pishin, and *via* the Bolau. This equipment should not be less than 30 engines, which is the number included in the estimates for both these projects.

Other rolling-stock is estimated in the ordinary proportion found to obtain on Indian Railways.

For project No. 3, the ordinary proportion of one engine for every three miles of the line is allowed, and other rolling-stock as in the previous cases.

*Temporary lines.*

In conjunction with either projects No. 2 or No. 3, it will be almost a necessity to have temporary means for conveying stores over the summit of the range during the construction of the tunnel, and this may even be advisable for project No. 1, although the time during which, in the latter case, temporary communication would be required would of course be far shorter.

The temporary system proposed for the Khojak Pass is to lay a single line of rails up the bed of the ravine from Killa Abdulla, directly sanction for the prosecution of the work is given, as far as gradient not exceeding 1 in 20 can be procured. This point is shown in the plans. Above this a single line with Abt rack is proposed to a place called "Waller's" camp, where the ravine suddenly narrows and above which it becomes too tortuous for a broad-gauge railway.

To surmount the summit it is proposed to have an incline worked by a stationary engine and wire rope, to haul wagons to the level of the top of the Pass, and a similar incline to descend the other side. The top of the two inclines, being some distance apart (nearly  $\frac{1}{2}$  mile), will be connected by a short length of single broad-gauge railway.

The foot of the west incline is a short distance above the proposed tunnel mouth on that side, but until the permanent line is complete it would be best to

continue the temporary line down the ravine to near Chaman Fort, where a temporary station, on the level, not far from the fort, and capable of being easily connected with the permanent line, can be obtained.

These inclines are shown in detail in the plans, and their working is best understood by a reference to the drawings.

The estimated cost of this temporary connection over the range is Rs5,07,380 for No. 2 project or Rs6,09,380 for No. 3 project.

The time necessary to put it in complete working order would be about four months from the date of arrival of the necessary machinery and plant.

The carrying capacity of these inclines should not average less than four wagons per hour, or 400 tons per day of 10 hours : but during an emergency they could pass 1,000 tons per 24 hours.

Many similar inclines are in use in Europe, some, with even steeper gradients, being used for passenger traffic.

#### *Comparison of the different Projects.*

In order to properly compare the relative cost of these projects it is necessary to assume a point at which they all converge on the far side of the range as well as a common starting point. The latter point is already fixed, being the station known as Gulistan Junction, on the existing Sind-Pishin Railway. From this junction railways are already existent to the entrances to the Gwaja and Khojak Passes,  $3\frac{1}{2}$  and  $7\frac{1}{4}$  miles in length respectively.

The point taken for convergence is the north-east corner of the Main Baldak hill, 13 miles west of Chaman Fort, and on the direct line between Chaman and Ashik. The reason this point is taken instead of one nearer Ashik is the nature of the country between Gwaja and Ashik. A direct line would go through a waterless desert consisting of rollings and hills, which would make the maintenance of a line most costly, and necessitate water trains for the supply of the maintenance staff and stations ; besides this, the desert is said to be the home of nomad tribes of questionable reputation, and the line would be liable to be injured by them at any time.

To follow the line of the old Kandahar road, while more free from sand, would still be in the same difficulties as regards water, which is only obtainable at a great depth, and even then is impregnated with salts ; this line would be almost equally exposed to raids by the inhabitants of the Registan. By keeping nearer the Khwaja Amran Range, these disadvantages are lessened, though not entirely removed ; and, taking all things into consideration, by Mian Baldak is deemed the best route for an extension.

The index sections annexed show the relative distances, levels, and gradients of the three projects.

The cost of a line from Gulistan Junction to Mian Baldak *via* the Gwaja Pass may be thus estimated :—

	Additional Cost.
	R
$3\frac{1}{2}$ miles constructed . . . . .	<i>Nil.</i>
26 „ Project No. I. . . . .	92,88,753
28 „ Extension, at one lakh per mile . . . . .	28,00,000
Working expenses to Mian Baldak at Rs50 per mile per week of extra length (13 miles), capitalised . . . . .	8,45,000
<hr/> $57\frac{1}{2}$ miles	
TOTAL COST	<hr/> 1,29,33,753 <hr/>

Cost of a line from Gulistan Junction *via* the Khojak Pass on Abt System.

							Additional Cost.
							R
7½ miles	constructed	.	.	.	.	.	Nil.
22½ "	Project No. II.	.	.	.	.	.	1,18,11,536
10 "	Extension	<div> <div> 4½ miles at 1¼ lakhs  5½ "       ¾ lakh </div> <div> } per mile </div> </div>					9,75,000
<hr/>							
40 miles.	TOTAL COST					.	1,27,86,536

Cost of a line from Gulistan Junction to Mian Baldak, *via* the Khojak route ; 1 in 40 line.

						Additional Cost.
						R
7½ miles constructed	.	.	.	.	.	Nil.
27 „ Project No. III	.	.	.	.	.	1,25,02,590
10 „ Extension	{	4½ miles at 1¼ lakhs	}	per mile		9,75,000
		5½ „ ¾ lakh				
44½	TOTAL COST					1,34,77,590

The advantage, therefore, as regards cost rests with project No. II.

It was before shown that the advantage as regards time for construction rests with project No. I.

The advantage as regards distance rests with No. II.

The index sections show that project No. I crosses at a summit level of 6,560 feet, project No. II at 6,460 feet, and project No. III at 6,400 feet. Therefore, as regards least rise and fall the advantage rests with No. III.

Projects Nos. I and II are each for a railway requiring a central rack rail and special engines, while No. III can be worked with ordinary rolling-stock ; therefore the advantage as regards simplicity rests with No. III.

As regards carrying capacity, the ruling gradient of 1 in 25 with central rack rail is given as the equivalent of one in 40 on an ordinary line ; therefore the maximum carrying capacity in a given time varies directly as the length, which gives the advantage to project No. II ; but as a certain time would be lost at the changing station in changing engines, it is probable that projects Nos. II and III are equal under this head, both having the same advantage over No. I.

As regards defensibility, local experts have expressed opinions in favour of the Khojak route ; project No. II having perhaps a slight advantage over No. III ; but this is a question best settled at head-quarters, where more information exists.

The cost of working, *ceteris paribus*, depends on the length : this would give No. II an advantage over No. I ; but, on the whole, taking into consideration the simpler engines and permanent-way, the absence of special contrivances, and the smaller rise and fall, the advantage rests with No. III instead of No. II.

The cost of working Nos. I and II would also be enhanced by the necessity of having to keep up a large number of engine-drivers trained to work the special engines during ordinary times ; for nothing would tend more to delays and accidents than putting untrained men in charge of such engines.

#### Opinion.

In the foregoing report I have endeavoured to describe with perfect impartiality the three projects now submitted for the passage of the Khwaja-Amran Range by Railway, and to state the advantages and disadvantages of each : but as I have also been instructed to state my own opinion, I have no hesitation in saying that, to my

mind, Project No. III is the one that should be carried out, if one of the three has to be constructed. My reasons for this opinion are that rack rails are unknown on any through line of railway; and although the Abt system seems to promise better results than any of its competitors, it is still untried as a main line expedient for crossing mountain ranges; and no Engineer or Company, in either Europe or America, has yet ventured to try it on a through line.

If its advantages are so great, it seems reasonable to suppose that the promoters of the Simplon Railway would have considered it before projecting the great tunnel under the Alps, which forms the prominent feature of their line. In America we do not find any main line using other than the well-tried simple railway. Their engineers are devoting all attention to improving the locomotive in order to surmount heavy inclines.

Another reason is that, in my opinion, a line laid with Abt rack rail can be more easily damaged than an ordinary line. A few shovels full of ballast strewed over the rack on a sharp curve would probably lift the pinion out of the rack, and thus lift the whole engine and cause it to leave the rails. The natives of this country are already too fond of experimenting with stones on the existing lines to be able to resist the temptation of trying their effect when placed between the teeth of a rack; while, in case of war, it would be almost impossible to watch the line so closely as to prevent frequent interruption from this cause.

If the Government of India wish to be the first to experiment on such a system, then let it be on some line of less importance than the Sind-Pishin, where failure under pressure might involve consequences it is impossible now to foresee. By all means let the Upper Bolan be laid on the Abt system as the experiment; for even if it is a failure, the line can still be used as a down line in the ordinary manner, and the ultimate loss cannot exceed the ten lakhs or so spent on the conversion of the upper or ghat length.

In the present case, the total amount that may be saved is but seven lakhs—an amount too small, in my opinion, to justify any risks being run. If time is considered of paramount importance, then it would be possible to shorten that required for constructing the tunnel by a larger use of machinery and European labour at an extra expense which would be comparatively small; and in the meantime the temporary rope inclines could be increased in capacity to double what they are now designed for by the simple expedient of doubling their number.

If there is no present intention of extending any line constructed through the range beyond a terminus within British territory at the western foot of the slope, as stated in Government of India letter dated 18th July 1887, to the address of the Director General of Railways, then I consider a line from Gulistan to Gwaj would be a mistake, either as a trade route or a military line, for the following reasons.

The regular road to Kandahar from Chaman passes to the north of Mian Baldek through Gutai and Dubri; and at the latter point the old road *via* the Gwaja pass joins it. The distance from Killa Abdulla to Dubri by the existing road over the Khojak is 38½ miles, and by the new military road now being laid out between Killa Abdulla and Chaman on a gradient of 1 in 25, it will be 44½ miles; while the distance from the proposed terminus near Gwaj to Dubri is 40½ miles. The Khojak road has plenty of water along its course, while travellers by the Gwaja route, for the greater part of the distance beyond our frontier, have to depend on a very limited supply from deep wells. It is evident therefore that no merchant from Kandahar would take his goods by the desert track and by a longer road, as at present exists, to Gwaj when he could take them to Killa Abdulla and thus save extra railway carriage.

In the case of a forward movement of troops the same argument applies. The march from Killa Abdulla to Dubri by the new military road would only be four miles more than from Gwaj, and would be over a better road.



For these reasons I consider that Killa Abdulla serves either purpose equally as well as the proposed Gwaja station; while by extending the Killa Abdulla line to Shumsh Khan, a distance of eight miles, the Khojak route would be the better of the two.

*Joint Memorandum on various Projects for crossing the Khwaja-Amran Range, by Colonel Conway-Gordon, Director General of Railways, G. L. Molesworth, Esq., Consig. Engr. to the Govt. of India for State Railways, and Colonel R. C. B. Pemberton, Secy. to the Govt. of India, P. W. Dept., dated 5th September 1887.*

In our joint memorandum of 11th June 1887, we gave our views as to the comparative merits of three projects for crossing this range; but we stated that the information then before us was imperfect; that the only estimates available were approximate, framed for the purposes of comparison only, and that, being based on imperfect data, we could not hold ourselves responsible for their accuracy.

2. The projects referred to in that memorandum were for crossing the range by what were termed the Khojak, Sanzal, and Gwaja routes, the ruling gradient in each case being 1 in 25.

3. We arrived at the conclusion that the Sanzal route need not be further investigated, and expressed our decided preference for the Khojak over the Gwaja route, on account of the advantages which, on the data before us, it appeared to possess, not only after completion, but during construction.

We alluded to the fact that recent information showed that it was probable that by the Khojak route a line with a ruling gradient of 1 in 40 could be found, and we expressed our opinion to the effect that "it would be preferable to incur a considerably larger expenditure if by doing so we could get a line without the use of the Abt rack, and thus be able to work throughout ordinary engines, as would be the case if a ruling gradient of 1 in 40 could be adopted."

4. In accordance with an Order in Council of 22nd June 1887, the Engineer-in-Chief was directed to prepare an estimate for the Khojak 1 in 40 project, and he has now submitted three projects in full detail, viz.—

No. I.—Gwaja route—with ruling gradient of 1 in 25.

" II.—Khojak " " " 1 in 25.

" III.— " " " " 1 in 40.

5. The estimates work out as shown below:—

DETAILS.	Project No. I. Gwaja Route: ruling grade 1 in 25.	Project No. II. Khojak Route: ruling grade 1 in 25.	Project No. III. Khojak Route: ruling grade 1 in 40.
	R	R	R
Works . . . . .	68,08,055	89,17,648	1,08,94,702
Rolling-stock . . . . .	17,16,700	17,11,500	4,23,000
<b>TOTAL</b> . . . . .	<b>85,23,755</b>	<b>1,06,29,148</b>	<b>1,13,17,702</b>
Plant . . . . .	2,60,974	3,89,752	3,92,252
<b>TOTAL</b> . . . . .	<b>87,74,729</b>	<b>1,10,18,900</b>	<b>1,17,09,954</b>
E-tablishments . . . . .	5,14,024	7,92,636	7,92,636
<b>GRAND TOTAL</b> . . . . .	<b>92,88,753</b>	<b>1,18,11,536</b>	<b>1,25,02,590</b>

6. The following are the other principal features involved in a comparison of the three projects :—

	PROJECTS.			
	Unit.	No. I. Gwaja Route : 1 in 25.	No. II. Khojak Route : 1 in 25.	No. III. Khojak Route : 1 in 40.
<i>Gradients.</i>				
1 in 40 or less . . . . .	Miles	14½	13½	27
1 in 25 . . . . .	"	11½	9½	...
<i>Tunnels.</i>				
Length . . . . .	Yards	520	3,600	4,080
<i>Abt Rack.</i>				
Length . . . . .	Miles	11½	9½	...
<i>Nature of work generally.</i>				
Easy . . . . .	Miles	20	11½	1
Medium . . . . .	"	3	6	...
Heavy . . . . .	"	3	6	...
<i>Lengths of New Line to be constructed.</i>				
To Terminus on west of Range . . . . .	Miles	26	22½	27
To Mian Baldek . . . . .	"	54	82½	37
<i>Lengths of line to be worked on completion.</i>				
From Gulistan Junction to west of Range . . . . .	Miles	29½	30	31½
From Gulistan Junction to Mian Baldek . . . . .	"	57½	40	44½
<i>Time required.</i>				
For completion of whole project to west of Range . . . . .	Years	1 ⅙* to 1½	2½	2½
For completing communication with temporary lines over summit . . . . .	Months	...	10	10

\* According as orders are received at the end or beginning of the winter season.

7. Another feature for comparison is the probable future cash outlay on the three projects.

From data supplied by the Engineer-in-Chief it appears that the value of materials in stock and already paid for, together with the amounts of preliminary expenses included in the estimates and already incurred, is as follows :—

	Project No. I.	Project No. II.	Project No. III.
	R	R	R
Estimate as above . . . . .	92,88,753	1,18,11,536	1,25,02,590
Expenditure already incurred . . . . .	23,30,740	20,66,390	23,19,920
Balance—Future outlay . . . . .	69,58,013	97,45,246	1,01,82,670

These figures for future outlay have reference only to the lines as far as the west of the range. If the extensions to Kandahar be ever undertaken, these differences will not be of any ultimate importance, as the larger the amount of permanent way already purchased and used on any project, the larger would be the deficiency in the Kandahar Reserve which would have to be made good should the line ever be extended to that point.

8. The estimates have been carefully examined by Mr. Molesworth, and we have every reason to believe that as regards probable cost they are fair and reasonable.

9. As to time required, we think that in all cases the estimates are at least not too small, whilst with regard to the tunnels we think the estimate of time is liberal.

10. Colonel Conway-Gordon, in his capacity of Director General of Railways, has quite recently examined the various alignments, and approves of them. He also considers the character of the rock, as far as can be judged without actually sinking shafts, is extremely favourable for tunnelling operations.

11. Before making any comparison between the projects, we would premise that, in our opinion, no comparison would be just which did not include the extension to Mian Baldek or its neighbourhood, for, as shown by Mr. O'Callaghan, the distance from Killa Abdulla to Dubri—a point on the Kandahar road—by the existing road is  $38\frac{1}{2}$  miles, and by a new military road now in course of construction will be  $44\frac{1}{2}$ , whilst the distance of Dubri from the proposed terminus of the Gwaja route on the west of the range is  $40\frac{1}{2}$  miles, so that after spending about 93 lakhs of rupees on the last-named route, we should be practically the same distance from Kandahar as Killa Abdulla on the other route, up to which point the railway is practically complete.

And we further consider that with a good road over the Khojak, it would certainly not be desirable to spend a sum of from 93 to 125 lakhs of rupees, to obtain railway communication merely to the foot of the range on the west, if it were not with the view of ultimately reaching Kandahar, should the necessity for so doing arise.

On these grounds therefore our comparisons refer exclusively to lines starting from a common point (Gulistan Junction) on the east of the range, to a common point (Mian Baldek) on the west, on the direct line to Kandahar by all routes.

12. Of the through routes the following portions are already completed or nearly so:—

	Miles.
Gulistan Junction to Killa Abdulla for two Khojak routes . . . . .	7 $\frac{1}{2}$
Gulistan Junction to Gulistan for Gwaja route . . . . .	3 $\frac{1}{2}$

13. We will first compare Projects I and II, *vis.*, the Projects with gradients of 1 in 25 and Abt racks, by the Gwaja and Khojak routes respectively.

14. The total lengths of new line to be constructed and their probable cost are—

*Project I—*

	Rs
26 miles, as per detailed estimate . . . . .	92,88,743
28 „ extension, at, say, 1 lakh per mile . . . . .	28,00,000
<hr/> Total . 54	<hr/> 1,20,88,753

*Project II—*

22 $\frac{1}{2}$ miles, as per detailed estimate . . . . .	1,19,11,536
4 $\frac{1}{2}$ „ extension, at 1 $\frac{1}{2}$ lakhs (double line)* . . . . .	5,62,500
5 $\frac{1}{2}$ „ „ at $\frac{3}{4}$ lakh (single line)* . . . . .	4,12,500
<hr/> Total . 32 $\frac{1}{2}$	<hr/> 1,27,86,536

But the entire distance between the common points being  $17\frac{1}{2}$  miles longer by Project No. I than by Project No. II, to the former should be added the capitalised value of the working expenses of the extra length, which at the rate of Rs50 per mile per week at 4 per cent, would amount to Rs11,37,500.

\* N.B.—A double line is estimated for for the portion on which the gradients are steeper than 1 in 100, and a single line only when the gradient is 1 in 100, or less.

Therefore, although the actual cost					<i>viz</i>	the Khojak would be the greater by				
					R	about 7 lakhs of rupees,* this route would				
* No. II	:	:	:	:	1,27,86,536	be about R4,40,000† the cheaper if the				
No. I	:	:	:	:	1,20,88,763	working expenses of the extra length				
					<u>6,97,783</u>	by the Gwaja route be allowed for. The				
† 11,37,500						estimate of R50 per mile per week is a				
					6,97,783	very low one.				
					<u>4,39,717</u>					

15. As regards cost, therefore, the balance of advantage lies with Project No. II as well as in distance and consequent time of transit.

16. But it is shown above that the expenditure already incurred which could be					R	utilised on Project No. I is R2,64 450 in				
† Previous excess of No. I	:	:	:	:	4,39,717	excess of that which could be utilised on				
Deduct . . . . .	:	:	:	:	<u>2,64,450</u>	project No. II, so that, as regards future				
					<u>1,75,267</u>	outlay, the latter project has an advantage of about 1½ lakhs only.‡				

17. The Engineer-in-Chief estimates that the time required for completing Project No. I to the west of the range would be 15 working months, to which must be added 4 winter months, making 19 months, or nearly two full working seasons (1st April to 30th November) in all, or say to end of October 1889, if orders to commence work are received any time before April next.

It cannot be completed much earlier if orders are received by 1st December, or even in November, as but little could be done, except easy work in the lower parts, till April. If received by 1st November 1887, the whole might be done a month earlier, say, 1st October 1889.

18. The time for completion of the Khojak Project No. II depends entirely on that required for the portion of tunnel (2,133 yards) between the shafts, which is estimated at 550 days, to which must be added 6 months for preliminary operations and a margin for contingencies, or, say, 2½ years in all. No allowance need be made in this case for winter months, as work would be continued all through the winter in the tunnel.

If therefore orders to commence work were received by 1st April 1888, the work should be completed by 1st October 1890; but if they were received by 1st November 1887, the work should, on this estimate, be completed by 1st May 1890, or only about 7 months later than the Gwaja project, as the winter months would in the one case be utilised in preliminary operations, importing machinery, &c., whereas in the other case but little could be done.

19. The time for completion of the entire project is consequently against the Khojak route; but this drawback is considerably modified by the fact that at a cost of about 5 lakhs of rupees it is estimated that a temporary communication over the summit, capable of transporting 40 tons per hour, could be completed in four months from the date of arrival of the machinery and plant, or, say, in 10 months from the date of orders.

20 It should be noted here that, in the comparison of cost above, no allowance was made in the case of the Khojak route for these temporary lines, as they do not form an essential feature of the project.

If added, the Khojak route would be found to be about 1 lakh in excess of the Gwaja route in first cost, after the addition to the latter of the capitalised value of the working expenses over the additional length.

21. To compare now Projects II and III, we have—					R
Project No. II—As before	.	.	.	.	1,27,86,536
Project No. III—					
27 miles as per detailed estimates	.	.	.	.	1,25,02,590
10 miles extension, as per Project No. II	.	.	.	.	<u>9,75,000</u>
Total	.	.	.	.	<u>1,34,77,590</u>

And the total distance from Gulistan Junction to Mian Baldek being  $4\frac{1}{2}$  miles

			R
* Project III :	:	:	1,37,53,840
Project II :	:	:	1,27,86,536
Total	:		<u>9,67,304</u>

	R
† 23,19,920	
20,66,290	
<u>2,53,630</u>	

	R
‡ 9,67,304	
2,53,630	
<u>7,13,674</u>	

more by the latter route, a sum of R2,76,250 should be added to Project No. III, as the capitalised value of working expenses, as in the case of No. I, making a total of R1,37,53,840, or nearly  $9\frac{1}{2}$  lakhs\* of rupees more than Project No. II.

22 But the cash outlay already incurred for Project No. III is about  $2\frac{1}{2}$  lakhs† in excess of that incurred for Project No. II, and therefore the difference in future outlay in favour of the latter will be under  $7\frac{1}{2}$  lakhs of rupees.‡

23. In regard to time the two projects may be considered equal.

24. It has to be observed that if the temporary lines are to be ready in ten months, as estimated in paragraph 19 above, it will probably be necessary in the cases of both Projects II and III to utilise the 7 miles of Abt rack and two engines now under supply for experimental purposes.

25. The length of temporary line on which the gradients are so steep as to require Abt racks or some special system is 6 miles.

26. In the case of Project No. II it can hardly be expected that the supply of rack for the permanent line can be delivered in time to allow of its being laid so as to have the temporary communication completed within the ten months; and in any case it would be inconvenient, and would possibly cause an interruption of traffic, if material had eventually to be transferred from the temporary to the permanent line.

27. As to engines in the case of this Project, transport over the summit could be carried on at the rate of 40 tons per hour with the two engines only, if necessary; but it should be possible to get two more out of those required for the permanent working within ten months, and this should be done.

28. In the case of Project No. III, no Abt rack will be supplied for the permanent line, nor any special engines; and the use for the temporary lines, if constructed, of the rack and engines now under supply will consequently be imperative. And, moreover, the risk of working with two engines only would be so great that we have thought it necessary to add about one lakh of rupees to the estimate for the temporary line in connection with Project No. III to provide two more, which should be telegraphed for at once, should this project be decided on. This addition has been made in the printed abstract at page 14 of Mr. O'Callaghan's report. These engines will, of course, be available for future use on any line of 5' 6" gauge, whether furnished with an Abt rack or not.

29. To sum up the advantages and disadvantages of Projects I and II—

#### *Advantages of Project I as compared with II.*

(i) The time for completion will be from 7 to 11 months shorter from the date of the order, the actual difference being dependent to some extent on the period of the year at which the order is received.

(ii) Owing to there being only one short tunnel, there is less uncertainty both as to cost and time than in the case of No. II.

#### *Advantages of Project II as compared with I.*

(i) The cost is nearly  $4\frac{1}{2}$  lakhs of rupees less (allowing in the case of Project I for the capitalised value of working expenses for the extra distance of  $17\frac{1}{2}$  miles).

- (ii) The future outlay is about 1½ lakhs less, after making the same allowance.
- (iii) The through distance is 17½ miles less.
- (iv) The length of Abt rack is 2½ miles less.
- (v) Temporary communication over the range can be established in probably 10 months at an additional expenditure of about 5 lakhs of rupees.
- (vi) Ordinary traffic to and from Kandahar would be more likely to take to this line at Chaman than to the alternative line at Gwaj.
- (vii) The water-supply beyond the range will probably be more satisfactory.

30. We have little hesitation, after comparing these advantages, in recommending Project II as against Project I.

The tunnel no doubt is the main objection to this route; but from the reports now submitted we do not anticipate that any exceptional difficulties will be met with, and we think that it will be quite as easy to defend the tunnel as the open line, if not easier.

31. Comparing now Project III with Project II, we have—

*Advantages of Project II as compared with III.*

- (i) The cost is about 9½ lakhs of rupees less (allowing in the case of Project III for the capitalised value of working expenses for the extra distance of 4½ miles).
- (ii) Future outlay will be about 7½ lakhs less, after making the same allowance.
- (iii) The distance will be 4½ miles shorter.
- (iv) The temporary arrangements (if required) will cost about one lakh of rupees less, as, for Project No. III, two additional Abt engines must be ordered to ensure continuous working. These engines, however, will be available for future working either on Abt or ordinary lines.

*Advantages of Project III as compared with II.*

- (i) The absence of all special arrangements in the permanent-way, and more consequent freedom from liability to destruction or damage.
- (ii) The absence of all necessity for special engines, and of the delay involved in changing the engines twice in a very short distance, and the fact that engines from all other lines of 5' 6" gauge can be used for the entire distance.
- (iii) The fact that the Abt rack has not yet been used on any through line, and must therefore be considered more or less experimental.

32. Having regard to all these considerations, we unanimously are of opinion that the additional simplicity of Project No. III is well worth the extra cost which is its only drawback, and have no hesitation in recommending this project as compared with either of the others.

33. Our recommendations are, it will be seen, in general agreement with what we said in our memorandum of June last. The further investigations which have been made since that was written have tended to increase the comparative cost of the Gwaja route, and shorten the time for the completion of the Khojak Project, and have therefore strengthened the views we then held, and the new project with 1 in 40 grades has turned out quite as well as we then ventured to hope it would do.

34. Our conclusions agree generally with those come to by Mr. O'Callaghan, the Engineer-in-Chief.

Appendix to Joint Memorandum by Colonel Conway-Gordon, Mr Molesworth, and Colonel Pemberton, dated 5th September 1887, on three projects for crossing the Kwaja-Amran Range.

### COMPARISONS BETWEEN THE THREE PROJECTS VIEWED IN VARIOUS WAYS.

PROJECTS.	TO TERMINATION WEST OF RANGE ONLY.				TO MIAN BALDEK.					Estimated cost of temporary lines not included in any of the previous columns (see abstracts at end of Mr. O'Callaghan's Report).
					Excluding WORKING EXPENSES OF EXTRA LENGTH.		Including WORKING EXPENSES OF EXTRA LENGTH.			
	Total Estimated Cost (see para. 5 of Joint Memorandum).	Past outlay (see para. 7 of Joint Memorandum).	Estimated Future Outlay. (2—3)	Total Estimated Cost (see paras. 14 and 21 of Joint Memorandum).	Estimated Future Outlay. (5—6)	Capitalised value of working expenses for extra length (see paras. 14 and 21 of Joint Memorandum).	Total Estimated Cost. (5+7)	Total Future Outlay. (8—9)		
1	2	3	4	5	6	7	8	9	10	
<i>Comparison of Projects Nos. I and II—</i>										
Gwaja route No. I	₹ 92,88,753	23,30,740	69,58,013	1,20,88,753	97,58,013	11,37,500	1,32,26,253	1,08,95,513	₹ 5,07,380	
Khobjak " II	1,18,11,536	20,66,290	97,45,246	1,27,86,536	1,07,20,246	...	1,27,86,536	1,07,20,246	5,07,380	
Gwaja, No. I, less	25,92,783	...	27,87,233	6,97,783	9,62,233	11,37,500	4,39,717	1,75,287	5,07,380	
" " more	...	2,64,450	...	...	...	...	...	...	...	
<i>Comparison of Projects Nos. I and III—</i>										
Gwaja route, No. I	92,88,753	23,30,740	69,58,013	1,20,88,753	97,58,013	11,37,500	1,32,26,253	1,08,95,513	...	
Khobjak " III	1,25,02,590	23,19,920	1,01,82,670	1,34,77,590	1,11,57,670	2,76,250	1,37,53,840	1,14,33,920	6,09,380	
Gwaja route No. I, less	32,13,837	...	32,24,057	13,98,837	13,99,657	...	5,27,587	5,38,407	6,09,380	
" " more	...	10,820	...	...	...	8,61,250	...	...	...	
<i>Comparison of Projects Nos. II and III—</i>										
Khobjak, No. II	1,18,11,536	20,66,290	97,45,246	1,27,86,536	1,07,20,246	...	1,27,86,536	1,07,20,246	5,07,380	
" " III	1,25,02,590	23,19,920	1,01,82,670	1,34,77,590	1,11,57,670	2,76,250	1,37,53,840	1,14,33,920	6,09,380	
Khobjak No. II, less	6,91,054	2,53,630	4,37,424	6,91,054	4,37,424	...	9,67,304	7,13,674	1,02,000	
" " more	...	...	...	...	...	...	...	...	...	

Dated 22nd November 1887.

Telegram from—Secretary of State,

To—Viceroy.

Your Railway Despatch No. 174. I have decided to sanction the proposal to commence Sind-Pishin Railway, Kandahar Extension, *via* Khojak, Number III.

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Dated 23rd November 1887.

Telegram from—Secretary of State,

To—Viceroy.

Sind-Pishin Railway, Kandahar Extension, *via* Khojak. In continuation of previous telegram, I sanction no expenditure on temporary line beyond what is absolutely necessary for efficient making of permanent work. Pending receipt of Shepherd's report, no decision should be taken involving employment of Abt system.

---

Dated 27th November 1887.

Telegram from—Viceroy,

To—Secretary of State.

Your telegram of November 23rd, Sind-Pishin Railway, Kandahar Extension, *via* Khojak. Continuous and effective line promptly required for construction permanent work, independently of other objects. As employment [of] Abt material objected to, we propose to work steep temporary inclines by five tank engines to be supplied through Store Department. Do you agree?

---

Dated 2nd December 1887.

Telegram from —Secretary of State,

To—Viceroy.

Your telegram in the Public Works Department, dated November 27th last, Sind-Pishin Railway Extension, *via* Khojak. Tank engines approved. Telegraph full particulars regarding [them].

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Dated 7th December 1887.

Telegram from—Viceroy,

To—Secretary of State.

Your telegram of 23rd November. Public Works Department maintain that it will be necessary to carry a temporary line over the Khojak in order to enable work to be commenced at western end of tunnel, as otherwise it would be impossible to get requisite machinery, et cetera, into position. Are we right in concluding that your sanction extends to this arrangement? We imagine it does; but I do not like to allow work to be begun except upon clear understanding of your wishes.

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Dated 8th December 1887.

Telegram from—Secretary of State,

To—Viceroy.

Your telegrams in the Public Works Department, dated 27th November and 7th instant. Construction of temporary Khojak line sanctioned on your representations.



No. 144 (Railway), dated 15th December 1887.

From—The Secretary of State for India,

To—The Government of India.

The telegrams marginally noted, which have passed between Your Excellency's Government and myself, since the receipt of your Railway Despatch No. 174, dated 26th September 1887, have conveyed to

Telegram to Viceroy, dated 22nd November 1887.

Ditto, ditto, dated 23rd November 1887.

you my sanction in Council to the extension of the Sind-Pishin Railway in the direction of Kandahar, by crossing and piercing the Amran Range by the route enumerated as No. 3 in your above-quoted Railway letter, which route your Government, on the reports of your professional advisers, recommend as the best for adoption.

2. After a full and careful consideration of the three possible routes described in your letter, I came to the conclusion that the continuance of the existing line from Killa Abdulla to a point on our frontier a little beyond Chaman, *via* the Khojak Pass, without the Abt or any other special system for working, the gradients being limited to 1 in 40, which an ordinary engine can work without difficulty, was in a military point of view (and it is from this point of view that the requirements of the line must mainly be regarded) the best adapted to the circumstances of the case.

3. The cost of this route is somewhat high as compared with that by the Gwaja route, but the facilities which will be afforded by the selected route being worked by the engines and trains that run over the line into Quetta are of such importance that the additional cost involved is amply justified.

4. I accordingly sanction the necessary operations for construction of the extension in question at an estimated cost of Rs 1,25,02,590, exclusive of an expenditure of Rs 6,09,380 on a temporary line, which Your Excellency has assured me, by your telegrams of the 27th November 1887 and 8th December 1887, is absolutely needed in connection with provision of the permanent line, and which I have sanctioned by my telegram of the latter date.

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#### 4.—Sind-Sagar Railway.

No. 166 (Railway), dated 25th October 1886.

From—The Government of India,

To—The Secretary of State for India.

In our Secret Despatch No. 25 of the 22nd September 1884, we reported that the cost of converting a portion of the Salt Branch of the Punjab Northern Railway, and of constructing the Sind-Sagar Railway as a continuation of it, would amount to Rs 215 lakhs conventional sterling for 361 miles. The forecast was only a rough approximation, and was based on a fair average mileage rate as nearly as our Railway officers could judge, because at that time we had no definite information to guide us beyond a rapid reconnaissance, carried from the salt mines at Khewra down the right bank of the Jhelum to Khushab, and thence across the Sind-Sagar desert to Darya Khan on the Indus river, opposite Dera Ismail Khan.

This project was sanctioned in Your Lordship's Despatch No. 148 R., dated November 27th, 1884. A revised estimate, placing the cost at 230 lakhs, was subsequently included in the programme submitted in our Despatch, No. 264, dated 22nd September 1885, and approved by the Secretary of State's reply No. 367 Financial, dated 10th December 1885.

2. In extension of this project, a branch line to strike the Indus at Mainwali, with a view to improved communication with Bannu, was recommended in our Military Despatch No. 112 of 10th July 1885, and approved in the Secretary of State's reply No. 271 Military, dated 15th October 1885. Some further explanations on this question will be found in paragraph 22 of our Military Despatch No. 156, dated the 4th instant.

In the details of the conversion of the Salt Branch from metre to broad gauge, moreover, some modifications have, in working out the whole scheme, been found indispensable. Originally we contemplated, as stated in paragraph 7 of our Despatch No. 25, already alluded to, the conversion of 54 miles between Lala Musa and Miani, thus leaving intact 9 miles of metre gauge from Miani to Bhera, and also the 5 miles of the purely Salt line from Pind Dadun Khan to Khewra. The best site for the Jhelum Bridge proved, however, to be near Malikwal station, only 43 miles from Lala Musa—a change which rendered feasible a broad-gauge branch of 9 miles to the Khewra Salt Mines, and consequently the abandonment of the Miani Salt Depot, and the despatch of salt direct from the mines without transshipment, with a corresponding advantage to our salt revenue. The Pind Dadun Khan metre-gauge line, 5 miles long, being thus superseded and in course of removal, it would have been a most inconvenient and costly arrangement to have kept up this short length of 18 miles between Malikwal and Bhera on a different gauge. The rails, moreover, were nearly worn out, and must shortly have been replaced. We, therefore, sanctioned its conversion; but as the traffic is very light, we are substituting good second-hand rails already taken out of the main line of the North-Western Railway, so that the actual outlay will only amount to 2½ lakhs of rupees. The whole of the stock we are transferring to the Lucknow-Sitapur Railway.

3. We have now the honour to report to Your Lordship the results of the detailed estimates for this railway, and are glad to be able to state that the original rough forecast was in reality a very near approximation to the actual cost of what was then contemplated.

4. As to the distance, we then assumed that about 307 miles of new line would have to be constructed, besides 13 miles of temporary fair-weather line across the bed of the Indus, and also that 54 miles of metre gauge must be converted, making a total of 374 miles comprised in the project, while 14 miles of metre gauge (9 from Miani to Bhera, and 5 from Pind Dadun Khan to Khewra) would be retained.

The final project now submitted provides for lengths of line with their necessary equipment as follows :—

*New line—*

	Miles.	Miles.
(a) Main line from Malikwal on the Eastern Section to the right bank of the Chenab river, opposite to Shere Shah on the North-Western Railway = .	295	
(b) Branch from Mehmedkot to Koreshi, opposite Dera Ghazi Khan = . . . . .	8	
	<hr/>	303
(c) Branch from Huranpore to Salt Mines at Khewra .	9	
(d) Branch from Kundian to Mianwali . . . . .	9	
	<hr/>	18
Fair-weather lines across the bed of the Indus river to the deep stream of the river—		
(e) From Darya Khan, opposite Dera Ismail Khan .	9	
(f) From Mianwali, opposite Isa Khel . . . . .	6½	
	<hr/>	15½
Total new line .		336½

*Converted line—*

(f) Lala Musa to Malikwal, including 2 miles extra for new suitable junction at Lala Musa . . . . .	45
(g) Malikwal to Bhera . . . . .	18
	<hr/>
Total converted line .	63
	<hr/>
GRAND TOTAL .	399½

The new line, excluding the subsequent additions [(e), (d) and (f)] mentioned in paragraph 2, is thus 312 miles, compared with 320 in the original forecast. The conversion is, as explained in paragraph 2, 9 miles shorter in the more expensive item of the main line, but comprises 18 miles of cheap branch line conversion not previously contemplated. Finally, while the original project consisted of 374 miles of new and converted broad gauge, and 14 miles of old metre gauge retained, to which the Mianwali Branch of 9 miles, with 6½ of temporary line, has been added, making a total of 403½ miles, the final outcome is 399½, or a saving of 4 miles, due to the shorter length of the Darya Khan fair-weather line.

5. Turning now to the question of cost, the present estimates, to which we ask Your Lordship's sanction, amount to R265½ lakhs, and are divided thus :—

	R
Construction of Western Section, including ferries .	2,41,32,186
Conversion of Salt Branch or Eastern Section, and extra stock . . . . .	24,13,326
	<hr/>
TOTAL .	2,65,45,512

The original forecast of 1884 was 215 lakhs, and the revised amount provided in the programme of 1885, 230 lakhs, as stated above, both being conventional sterling. The subsequent additions amount to 43½ lakhs as under :—

	Lakhs.
(a) Mianwali extension and temporary line . . . . .	9
(b) Substitution of 75-lb for 62-lb broad-gauge rails by Secretary of State ( <i>vide</i> Despatch No. 6 R.S., dated 25th February 1886) . . . . .	6½
(c) Loss on exchange included in estimates under recent orders . . . . .	28
	<hr/>
TOTAL .	43½

Excluding these additions, the result is 222 lakhs in round numbers, and there is consequently an excess of only seven lakhs in the present estimate compared with the original forecast of 1884, but a saving of eight lakhs on the revised figure of 1885, notwithstanding the additional conversion to Bhera not then contemplated.

To put the matter in another form, the present estimates shew a gross excess of 35½ lakhs over the figure of 1885, but, after deducting 34½ lakhs for heavier rails and exchange as above, a net excess of only one lakh, notwithstanding that we obtain 16½ miles of new 5' 6" line and 9 miles of converted line more than was originally contemplated. This result has been attained by the strictest economy in design and execution.

6. Our Railway Despatch No 154, dated 4th October 1886, with its accompanying index map, will have shewn how the railway has been aligned, and the progress made with its construction, but further details seem necessary, and are given below.

7. The estimate for the Western Section now submitted amounts to R2,41,32,186, or R71,715 per mile. Provision is made in it for steam ferries on the Chenab river at the main line terminus opposite Shere Shah, and on the Indus river at the crossings for Dera Ghazi Khan and Dera Ismail Khan. It may also be necessary to provide improved arrangements for the ferry crossing at Isa Khel; but the matter is under consideration, as intimated in paragraph 22 of our Military Despatch No. 156, already referred to, and is not included in the present estimate.

8. On the portion of this section between Pind Dadun Khan and Khushab much more water-way has been given than was at first anticipated, but on other sections our mileage forecast was found more than ample. The estimate for ballast has been made on the supposition that provision for this will be only necessary on some 80 miles at the northern end, where timber sleepers are being used, and that for the rest of the line, which is being laid with steel sleepers, the ordinary sand or alluvial soil will serve for their packing. But the experience of the past hot season, throughout which some 4 or 5 material trains have been constantly worked over the Southern Section, goes to show that the sand is for considerable distances exceedingly fine, and is blown away from under the steel sleepers by the high winds which are constant during the hot season. It may therefore be necessary to ballast these places, either wholly or in part, with broken brick; but as we have not at present sufficient information on the subject, no extra provision has been made for this work. Should it be necessary to add a top layer of brick-ballast, or to cover the sand ballast with a layer of bricks laid loosely over the sand, the further expenditure may be estimated at about R10 lakhs.

9. For the conversion of the Eastern Section from the metre to the standard gauge, the estimate now submitted amounts to R18,63,326 for the conversion of the whole 63 miles of line, and we have added to it a general provision for additional rolling-stock. The details are as follow:—

	R	R
Conversion, Lala Musa to Malikwal . . .	15,95,086	
„ Malikwal to Bhera . . .	2,68,240	
	<hr/>	18,63,326
Additional rolling-stock for the whole line debited to this section . . . . .	...	5,50,000
		<hr/>
TOTAL . . .	...	24,13,326
		<hr/>

10. In connection with the subject under notice, we may inform Your

Lordship that our Director General of Railways has submitted approximate estimates for bridging the Chenab river at Shere Shah, and for connecting the Western Section with the Khushalgarh Branch of the North-Western Railway by a line from Mianwali to Gaggan.

The estimate for the Shere Shah Chenab bridge amounts to Rs42,52,180, and provides for a girder bridge of 26 spans of 200 feet each; but this estimate does not include any provision for approaches and subsidiary training works.

The survey for the Mianwali-Gaggan line to connect the Sind-Sagar line with the Khushalgarh Branch of the North-Western Railway shews that it would be 105 miles in length, and would cost Rs1,10,57,200, or Rs1,05,307 per mile. The centre and northern portions run through a somewhat difficult country, and thus enhance the cost of the whole. The ruling gradient would be one in 100. As already stated in our Military Despatch No. 156, above alluded to, however, we are not prepared to make any recommendation to Your Lordship with regard to either of these projects.

11. Salt traffic has been carried on from the mines at Khewra, over the standard gauge line to a ferry at Malikwal since the 1st September last. The Eastern Section from Lala Musa to Malikwal was opened for traffic on the standard gauge on the 12th February last; the conversion of the short length from Malikwal to Bhera will shortly be completed; and we anticipate the very early opening of the southern portion from the Mooltan end as far north as to opposite Dera Ismail Khan.

12. In conclusion, we have already in Railway Despatch No. 154, dated 4th October 1886, drawn Your Lordship's attention to the very satisfactory progress that has been made with this railway, and we have now pleasure in reporting that the works are being carried on in a very creditable and economical manner. They have been designed and executed by the Engineers-in-Chief who have been in charge from time to time (Messrs. F. L. O'Callaghan, C.I.E., F. R. Upcott, and J. Ramsay).

### SIND-SAGAR STATE RAILWAY.

#### WESTERN SECTION.

#### *Abstract Estimate of cost.*

Major Head.	Minor Head.	Work.	Amount.
			R
I	.....	Preliminary expenses . . . . .	78,000
II	.....	Land . . . . .	2,20,000
III	1	Earthwork . . . . .	10,96,456
	2	BRIDGEWORK—	
		1.—Minor bridges . . . . .	5,25,864
		2.—Large bridges . . . . .	32,88,400
	4	Level crossings . . . . .	2,54,131
	5	Fencing . . . . .	1,05,559
IV	1	Ballasting . . . . .	6,48,904
	2	Permanent way . . . . .	1,10,58,779
V	1	Stations and offices . . . . .	6,52,379
	3	Staff quarters . . . . .	3,64,358
	4	Station Machinery . . . . .	8,31,918
VI	.....	Plant . . . . .	4,06,350
VII	.....	Steam ferries . . . . .	7,00,000
VIII	.....	Refrigerators . . . . .	33,00,000
IX	.....	Locomotives . . . . .	6,00,000
		TOTAL . . . . .	2,41,32,186

## SIND-SAGAR STATE RAILWAY.

## EASTERN SECTION.

*Abstract Estimate of cost of conversion from metre gauge to broad gauge.*

Head.	Lala Musa to Malikwal.	Malikwal Bhera.	Total.	REMARKS.
	₹	₹	₹	₹
Preliminary . . . . .	9	.....	9	
Land . . . . .	51,700	.....	51,700	
Earthwork . . . . .	67,500	4,545	72,045	
Bridgework . . . . .	70,242	6,290	76,532	
Ballast . . . . .	2,02,600	49,533	2,52,133	
Permanent-way . . . . .	9,96,760	1,79,624	11,76,384	
Stations and Buildings . . . . .	56,152	1,245	57,397	
Station machinery . . . . .	1,06,108	17,338	1,23,446	
Staff quarters . . . . .	6,815	.....	6,815	
Plant, Engineering . . . . .	7,200	.....	7,200	
Rolling-stock . . . . .	.....	.....	5,50,000	
Establishment . . . . .	10,000	.....	10,000	
Contingencies . . . . .	20,000	9,665	29,665	
TOTAL . . . . .	15,95,086	2,68,240	24,13,326	

No. 1 (Railway), dated 6th January 1887.

From—The Secretary of State for India,

To—The Government of India.

I have had before me in Council your letter No. 166, dated the 25th October 1886, forwarding a fresh estimate of the Sind-Sagar System of railways.

2. It appears that the modifications and additions which you have deemed it necessary to make to the original designs for these lines have raised the estimated outlay to about 35½ lakhs in excess of the 230 lakhs provided in the programme of 1885. The total cost will now be 287½ lakhs, viz., the 265½ lakhs just mentioned, and 22 lakhs for the original cost of the metre-gauge line from Miani to Bhera, as stated in Lord Hartington's Public Works Despatch No. 183 of the 22nd December 1885.

3. I observe in the figures given in paragraph 5 of your letter under reply that a sum of 28 lakhs for loss on exchange is stated to be included in the estimate of additional expenditure "under recent order." I am not aware how any recent orders can have affected the exhibition of loss by exchange on English capital expenditure for Public Works, and I shall be glad to know how the amount has been arrived at, and whether a similar charge was omitted in the forecast of 2,852½ lakhs for the whole frontier system sanctioned by Lord Randolph Churchill's Financial Despatch No. 367, of the 10th December 1885. You state that the "strictest economy in design and execution" has been observed in carrying out this railway, and I accept this assurance of Your Excellency, and accord my sanction to the estimates submitted.

4. I have to add that I receive with pleasure the testimony which you bear to the creditable and economical manner in which the works have been designed and carried out by Messrs. F. L. O'Callaghan, F. R. Upcott, and J. Ramsay of your Public Works Department.

## 5.—Chenab Bridge.

No. 187 (Railway), dated 10th October 1887.

From—The Government of India,

To—The Secretary of State for India.

With reference to paragraph 13 of our Military Despatch No. 156, dated 4th October 1886, and paragraph 8 of Your Lordship's Military Despatch No. 24, dated 27th January 1887, we have the honour to report, for Your Lordship's information, that in May last we ordered a survey to be undertaken of the River Chenab at Ramuwalla, on the Sind-Sagar State Railway, in view to the selection of a site for a railway bridge over the river at that place, and we have, within four months of the date of issue of those orders, been furnished by our Director General of Railways with the project for this bridge.

2. We beg to transmit herewith copies of letter from our Director General of Railways, No. 986 C., dated 21st September 1887, together with the report and abstract estimate relating to the bridge and the works connected with it.

	₹
Bridge proper, including stone protection of piers . . . .	37,40,416
River training works . . . .	8,83,680
Line to connect the bridge with North-Western Railway, and new junction station . . . .	3,75,904
<b>TOTAL</b> . . . .	<b>50,00,000</b>

It will be perceived that the bridge, which is for a road as well as a railway, is estimated to cost ₹50,00,000, as detailed on margin, and we would ask Your Lordship's sanction to its construction being taken in hand at once, in order that the indispensable preliminary of brick-

making may be carried on during the coming fair season.

3. The outlay in the current year is not expected to exceed 5 lakhs of rupees, which we shall be able to provide out of our reserve for Military railways. The allotment for next year is provided for in paragraph 11 of our Despatch No. 57, Public Works, of this date.

Dated 1st November 1887.

Telegram from—Secretary of State,

To—Viceroy.

Your telegram in the Public Works Department dated 1st November. Collection materials Chenab Bridge sanctioned. A Despatch on the subject will follow.

## 6.—Mandalay Extension—Burma Railway.

No. 148 (Railway), dated 20th September 1886.

From—The Government of India,  
To—The Secretary of State for India.

In paragraph 6 of his Despatch No. 52 of 10th June 1886, Lord Kimberley

Telegram, dated 16th July 1886.

From—Viceroy, Simla,

To—Secretary of State, London.

Your Despatch No. 52 of 10th June, paragraph 6. Having requested Bernard to send me his opinion on (the) question of road *versus* railway, he has replied:

Trunk road without bridges over six or seven big streams would cost for construction about 40 lakhs, and for maintenance yearly 1½ lakhs, and it would not serve purpose of railway in respect of trade, because native produce could not bear expense of transport over such great distances. Cost of moving troops and supplies would be five times as great, and time occupied ten times as long.

In short, railway would be far more effectual in pacifying country, promoting trade, and strengthening outer positions, in military, political, and administrative sense.

Method of first constructing road and afterwards laying rails upon it is condemned by all Indian experience as expensive, inconvenient, and unsatisfactory.

Bernard's arguments, of which (the) above is (a) bare outline, appear to us conclusive in favour of railway. Fuller statement of question will be forwarded in due course.

We have now the honour to forward the fuller statement promised in our telegram, together with copies of two memoranda submitted by the Chief Commissioner reviewing exhaustively the military, political, and financial aspects of the question, to which we invite Your Lordship's particular attention. We send also copy of a note prepared in our Public Works Department analysing the various proposals we have received for the construction of the extension to Mandalay through the agency of private enterprise.

2. Your Lordship will perceive from a perusal of Sir Charles Bernard's notes that the construction of the proposed railway is practically an administrative necessity, owing to the physical configuration of the country, by which the entire eastern section of the province is cut off from communication with the great arterial line of the Irrawaddy river, which serves as the highway of trade and base of military operations for the Western and Central districts. A well-devised system of comparatively short and cheap roads to connect the more inland towns and villages of these naturally favoured districts with those on the banks of the main stream or of its navigable affluents will suffice to give easy access to them at all seasons and afford every necessary administrative and commercial facility for many years to come. The transport by cart of bulky country produce is always costly, but short leads to points where water carriage is available add but little to the aggregate cost of conveyance from the place of production to final destination, and under no conditions are they ever altogether avoidable. Military operations of which the scope does not extend much above an ordinary day's march from a river base can moreover always be executed with rapidity, and they entail no embarrassment on account of land transport for the carriage of supplies, &c.

3. The case of the Eastern districts lying between the Shan hills and the Pegu Yoma range is however quite different. This extensive tract, about 150 miles long



with an average breadth of about 50 miles, is for all practical purposes land-locked and possesses no natural line of through communication or outlet for its produce. A considerable portion of it is fairly populous and well-cultivated, and the only bar to the extension of cultivation is the difficulty of carrying the produce to a profitable market. The cart tracks across the broken upland country which separates it from the Irrawaddy are few and bad, and the distance to be traversed before water carriage can be obtained varies from 80 to 100 miles. Owing to the long land march required to gain access to the heart of this tract, whichever way it is approached, the movement of troops is a costly and tedious matter, and the position of our garrisons on the Shan border, cut off as they are from all possibility of speedy reinforcement in case of emergency, a source of anxiety. The difficulty of access, and the slowness with which military movements have necessarily to be executed, are moreover calculated to dispose the people to turbulence, and as a consequence to seriously retard the work of pacification.

4. Whether we connect these isolated districts with the great highway of the Irrawaddy at three or more points by cross roads perpendicular to the general course of that river, or with the river on the north at Mandalay and with the railway on the south at Tounghoo by a trunk road traversing it from end to end, the cost will be practically the same, *viz.*, about 30 lakhs in either case without bridges over the principal streams. But to effectually open out the tract by roads alone, so far as it can be opened by means of roads only, would in our opinion require the construction of both the cross and the longitudinal roads, involving an outlay of not less than 60 lakhs, and for this sum we should obtain about 500 miles of road, with the principal streams unbridged. Some sections of the cross roads would necessarily have to run through wild and rugged country involving stiff inclines and heavy haulage. With the help of such a system of longitudinal and transverse roads reinforcements and supplies could probably be made to reach Yemethen,—the heart of these districts—in about 10 days after despatch, from either extremity of the trunk line or from a point on the river base along one of the transverse routes, provided the necessary transport could be immediately collected and made available for the use of the expeditionary troops. But with the help of a railway the time required to reach Yemethen would be scarcely as many hours, and no delays need be apprehended on the score of transport.

We must, however, explain that the above figures are Sir C. Bernard's, on the basis of an average of £12,000 per mile, which appears to us to be very low.

5. As regards the development of trade and agriculture, which we look upon as a most important factor for the success of any scheme for the early settlement of the province, we have no hesitation in accepting Sir C. Bernard's views as to the inadequacy of roads alone to produce any marked effect upon either, so far as the eastern districts are concerned. In a country so naturally fertile as Burma it requires but little effort to obtain from the soil sufficient food for the needs of the people, and the stimulus of a ready and remunerative market for the products of its labour is necessary to induce a pleasure-loving race, not too prone to physical exertion, though keen traders where a fair profit is attainable, to settle down to the peaceful occupations of agriculture and commerce.

A railway while under construction would provide ample employment for the labouring classes, and the influx of money into the district would give an impetus to production and trade, which the facilities afforded by it on opening would subsequently foster and enlarge.

Sir Charles Bernard shows conclusively to our minds that no system of road communication which it is possible for us to make will bring the districts along the Shan border within reach of a profitable market for their produce. The distances to be traversed and consequently the cost of transport by cart will be too great to allow of the necessary margin for profit in competition with the produce of more favoured localities. The State cannot find continuous employment for a population

which has no incentive to work in its own interests, and, lacking employment of a sufficiently lucrative character to keep the masses occupied and content, civil administration would, we fear, be impossible without the constant presence and support of a large military garrison scattered in strong detachments over the face of the country and maintained at a cost far beyond the capabilities of the provincial finances to bear.

6. A railway to connect Mandalay with Tounghoo may therefore, on the grounds above set forth, be looked upon as a necessity of economical administration; that its construction would greatly contribute to the strength of our military position in the province, and more especially in its eastern and least accessible districts, we have already pointed out; and we may also add that from a political point of view the effect of opening a railway to Mandalay cannot fail to be most important both on Upper Burma and on the Shan States bordering it, by removing conclusively all doubts as to the conquest of the country and as to its having been finally annexed — facts which have not yet been fully realised by a considerable proportion of the people. That as a commercial undertaking it would ultimately prove a decided success we have the experience of the railways already made and working in this province, under almost precisely similar conditions, to justify us in confidently predicting. The initial cost of a railway would, indeed, be from 6 to 7 times as great as that of a trunk road of the same length or from 3 to 4 times that of a combination of cross and trunk lines of road, but the capital sunk in its construction would in a short time give a return exceeding the interest charges on it; whereas the mere maintenance expenses of a road system would represent a capitalised sum fully 50 per cent. greater than its first cost. The traffic thrown by the extension on the Tounghoo-Rangoon Section would also be a source of considerable revenue with which the extension may fairly be credited as indirect profits. The railway would thus not only be self-sustaining, but contribute from its excess profits towards the up-keep of the roads which must hereafter be made to supplement and feed it, besides being an instrument for the pacification and development of the districts it will serve incomparably superior to any system of roads, however perfect.

7. We have not yet received any detailed project for the railway, but the note by the Chief Commissioner, dated 10th June 1886, describes clearly the route the proposed railway would follow northwards from Tounghoo to Mandalay. Some time ago we sanctioned an estimate amounting to Rs1,64,000 for the survey of the line, and the preparation of the necessary estimates. The section between Tounghoo and Ningyan, a distance of 59 miles, has now been carefully surveyed and the line located. A detailed survey of the part south from Mandalay to the crossing of the Panlaung river beyond Kyaukse, a distance of 44 miles, has also been made, and we are assured that the estimates for those sections will be submitted in time to allow construction to begin in October should sanction be accorded to the project. It has not yet been possible to make detailed surveys along the intervening section, but the part between Ningyan and Yemethen is well known, and the remainder has recently been reconnoitred by our Railway officers. We are therefore in possession of sufficient knowledge of the physical features and of the obligatory points on the route to establish the fact that the country is easily practicable for a line of railway.

8. Until the line is located throughout, it cannot be said what its exact length will be; but the Chief Commissioner now places it at about 240 miles. Assuming that the distance is under-estimated and that it may eventually amount to 250 miles, and allowing a mileage rate of Rs7,000, which has been the average cost of the existing railways in Burma after correction for loss by exchange, the extension from Tounghoo to Mandalay may be expected to cost at the most not more than Rs225 lakhs in round numbers. It will be observed that this estimate is higher than that of Sir C. Bernard, which seems over-sanguine, and also omits exchange.

9. In the beginning of the next working season, say, 1st November, we expect

to be in a position to commence work on about 103 miles of line—59 at the southern end and 44 at the northern end. In the interval we shall have had full time to consider and pass orders on the detailed plans and estimates of those two sections. If, therefore, we are able to utilise the approaching working season to the utmost, and to prosecute the work with energy, these two sections should be completed for traffic by the beginning of the year 1888; indeed, Sir C. Bernard considers that with an early commencement it would be possible to open the southern section as far as Yemethen by April 1888, and the line throughout by March 1889. We shall have no difficulty in providing an efficient staff for the whole work from our regular establishment. We would invite Your Lordship's attention to paragraphs 14, 15, and 16 of the Chief Commissioner's note of the 10th June, in which the questions of traffic prospects, local labour, and the great desirability of starting work as early as possible are fully stated.

10. We will now proceed to consider the question of the agency that it is desirable to employ for making the extension. Apart from financial considerations, very strong reasons exist for retaining the entire control of the operations in the hands of Government.

In the tract through which the railway will pass the villages have been much disturbed by dacoits and rebels, and special measures may be necessary for some time to come for the protection of the works; in fact, the various station buildings may not improbably have to take in the first instance the form of small fortified posts. In the event of the country remaining for any length of time in an unsettled state, such as to impede work, we should undoubtedly have to meet troublesome claims from any company prosecuting the works under any form of Government guarantee. Moreover, we should not have the complete control in the event of war which it was thought so important to retain in the case of the railways on the North-Western Frontier.

As regards the mere agency of construction, we have already pointed out that our existing establishment is sufficient to undertake the work, and experience has abundantly shown that, under normal circumstances, progress under the State compares not unfavourably with that under guaranteed or private companies, provided that a steady supply of funds can be relied upon. Such a supply, it may be admitted, is assured by the employment of private companies, but it is an advantage for which we may be called upon to pay too heavily; and the various proposals that have already come before us for consideration seem to be all more or less exorbitant,—in one case at least unsound.

11. Assuming that Government retains the existing lines in its own hands, and carries out the extension from loans raised at 3½ per cent.; assuming also that work is started in November next, the financial results would probably be somewhat as under:—

	Capital expenditure on the extension.	Increased interest charge.	Increased Revenue.	Net additional charge.
	₹	₹	₹	₹
1886-87 . . . . .	20,00,000	35,000	...	35,000
1887-88 . . . . .	1,00,00,000	2,45,000	1,50,000	95,000
1888-89 . . . . .	80,00,000	5,60,000	3,00,000	2,60,000
1889-90 . . . . .	25,00,000	7,44,750	4,50,000	2,93,750
1890-91 . . . . .	...	7,87,500	7,50,000	37,500
1891-92 . . . . .	...	7,87,500	10,50,000	—2,62,500
1892-93 . . . . .	...	7,87,500	11,90,000	—4,02,500

*Note.*—This item necessarily includes increase on existing lines due to expansion of local traffic, as well as to traffic brought on them by the extension.

It may be mentioned that this forecast assumes that the entire system will be earning 4 per cent. on its capital in the year 1892-93 : a further development may be reasonably expected in subsequent years.

12. Of the proposals that have been made by private companies, the most apparently favourable to Government is that submitted by Messrs. Waring & Co. (with whom are associated Sir James Brumlees & Co. and Messrs. Ransomes and Rapier). Under these proposals Government is asked to cede to the Company for a short term of years the surplus profits of the existing lines, after recouping itself 4 per cent. interest on the cost of their construction ; in fact, the Company, it is understood from a communication received from Sir C. Bernard, is prepared to guarantee Government 4 per cent. on the cost of the existing lines. Beyond this temporary cession no guarantee is asked. The Chief Commissioner thinks that such a cession might extend over a period of 4 years if the line is pushed only as far as Mandalay, and for a further term of 6 years if it is taken to Bhamo, but it is hardly probable that so short a period would suffice even under the most favourable circumstances ; and in our opinion it would be inadvisable to enter into any agreement which would eventually divide the management of the system.

13. From a purely financial point of view the scheme appears unsound, and is based on the misconception that the existing lines now pay far better than is actually the case. In 1882-83 and in 1883-84, indeed, the percentages earned by the Irrawaddy line amounted to 4.45 and 4.92 respectively ; but we doubt if in the present unsettled state we can hope for a much greater dividend than 4 per cent. even on this line, and the Tounghoo line has not at present attained a sufficient development to be relied upon to give a return of more than 3 per cent. for the next two or three years. In the earlier years of construction, therefore, the Company would be compelled, under such a concession, to make good to Government from its capital any deficit in interest due on the capital of the existing lines, and would probably have to provide similarly for the interest on the additional capital required for the extension. Our present knowledge, moreover, scarcely warrants the hope of the entire Burma system, including this extension, paying more than 4 per cent. for some years to come.

It seems to us impossible therefore that under conditions such as those offered by Messrs. Waring the requisite capital could be raised, more especially as the existing lines cannot yet be said to be certain of covering even in the near future 4 per cent. on the cost of their construction ; and such a contract as they propose could scarcely fail to terminate prejudicially to ourselves, in some such manner as that of the Bengal Central Railway.

14. Messrs. Finlay, Muir & Co. have proposed to buy up the existing lines and construct the extensions on a guarantee of 4 per cent. +  $\frac{1}{2}$  surplus profits ; and a Company represented by Messrs. Thelwall and Robinson offers similar terms, substituting  $\frac{2}{3}$  for  $\frac{1}{2}$  the surplus profits.

Under the Finlay-Muir scheme we estimate that the cost to Government during the first seven years would be nearly 6 lakhs of rupees greater than if the extension were made by Government, and that thereafter the loss would be ₹1,12,500 per annum if the system earned 4 per cent., and an additional loss of ₹2,55,000 per annum for each 1 per cent. in excess of 4.

15. Lieutenant-General Dickens' scheme, which was forwarded to us with the Despatch of 11th March, is still less favourable to Government, showing a net comparative loss to Government during the first seven years of about ₹19 lakhs and an annual loss of nearly ₹4½ lakhs, assuming the railways to yield 4 per cent., which loss would be further increased by ₹1½ lakhs for each additional 1 per cent. in excess of 4.

16. We attach for Your Lordship's information a note comparing in detail the financial results of the various proposals above referred to for the purchase and

extension to Mandalay of the Burma Railway, with those of management and extension by State Agency, in which it is made clear that we should suffer very considerable loss by selling the existing lines to a Company and entrusting it with the extension. The advantages from all points of view being so manifestly in favour of construction by the state, we have no hesitation in recommending that course for Your Lordship's favourable consideration.

17. With reference to the construction of the line by State agency, we have very carefully considered the suggestion made in paragraph 51 of Lord Kimberley's Despatch No. 216 Financial, dated the 29th July last, that the funds "should, if possible, be found by the postponement of operations on other lines of railway, or of some other expenditure not equally urgent." We do not think it would be desirable in the interests of economy to stop the construction either of the famine lines in active progress or of the frontier lines now rapidly approaching completion. On the other hand, it is necessary for political reasons to complete with the least possible delay the scheme of frontier and coast defence works at present in hand, the urgency of which is not, we believe, called into question.

It is not, therefore, possible to find the necessary funds by the postponement of operations on other lines of railway, or of some other expenditure not equally urgent. At the same time, we are fully aware of the objections to increasing, in the present financial situation, the amount of our obligations, and especially of our annual borrowing in the market. We are on the whole of opinion that the least objectionable method of providing ourselves in these circumstances with the necessary funds will be to carry out, on the conditions proposed in our Despatch No. 196, dated 26th June 1886, the negotiations at present in suspense for the prosecution of the Nagpur-Bengal Railway scheme. The terms might be "Indian Midland," "Bengal and North-Western," or such as Your Lordship may, under the circumstances, deem preferable. The concession would provide us with a refund amounting to about 111 lakhs of rupees, which will, we calculate, with other resources at our command available to meet any small possible excess, enable us to meet all demands for the Mandalay Extension up to the close of 1887-88. By that time, the famine and frontier railways now in hand will have been completed, and the question of the mode of supplying funds necessary for the completion of this extension in 1888-89 can be considered in the light of the circumstances of the time, without prejudice to the prosecution of railways in course of completion, such as at present make the question of provision of funds more embarrassing to deal with. It is not to be denied that we shall under the plan which we propose add to our obligations in the ensuing year by the amount of the refund anticipated. The necessity, however, in which we believe ourselves placed of bringing to completion without waste the works on which we are actually engaged and at the same time of carrying out without increasing the amount of our annual loan operations the project the urgent need of which forms the subject of this Despatch seem to us, in the present instance, to justify the course which we propose. It may be added that the scheme which we now put forward for Your Lordship's acceptance will enable us to carry to early completion a section of the Bengal-Nagpur project which is likely to be very remunerative, and which, as shown in our Despatch No. 132, dated 20th April 1886, will not impose on our finances during construction a burden in excess of that which otherwise must fall on them, for repair of the present narrow gauge line, should that line be maintained.

18. If Your Lordship accepts our conclusion that the early construction of the proposed line of Railway is indispensable for the speedy settlement of the country and the subsequent development of its trade and great natural resources, and that no system of roads will as effectually or as speedily serve the same end, we trust that we shall receive by telegraph Your Lordship's sanction to allow work to be commenced on the sections of the line for which we may receive complete projects, as soon as the season will permit and the necessary funds can be provided.

*Memorandum by SIR CHARLES BERNARD, K.C.S.I., Chief Commissioner of Burma, dated the 10th June 1886.*

On more than one occasion recommendations have been made to the Government of India that a railway should be made through Her Majesty's new dominion of Upper Burma to Mandalay and eventually to Bhamo, which latter place is close to the border of Western China. The Government of India have fully recognised the importance of the matter, and have authorised the detailed survey of the proposed railway line as far as Mandalay at an estimated cost of about  $1\frac{1}{2}$  lakhs of rupees for the survey alone. The work is in progress. By September next we shall have 100 miles of the line surveyed, aligned, staked out, ready for prosecution, with detailed plans and estimates, and we shall also have a reconnaissance by Railway officers of 40 to 60 miles more. The whole length from Tounghoo, the present terminus of the Lower Burma line, to Mandalay will be, approximately, 220 miles, and the total cost of the extension to Mandalay will be about 168 lakhs of rupees or £1,260,000 at 1s. 6d. per rupee.

The railway onwards from Mandalay to Bhamo will be a heavier undertaking than, and may be kept apart from, the Mandalay railway scheme. It is proposed now to discuss the Mandalay project only and to dwell specially on—

- (i) the need for such a railway ;
- (ii) the best route for the line ;
- (iii) the political, military, and commercial advantages that would result ;
- (iv) the probable traffic that would come to the line ;
- (v) the labour available for the work.

2. Mandalay is a city of about 100,000 inhabitants ; it is the only place in Upper Burma that contains more than 12,000 or 15,000 people ; it has by far the largest trade in Upper Burma ; it is the source whence districts containing about  $1\frac{1}{2}$  millions of Burmans and perhaps two millions of Shans draw their supplies of piece-goods, yarn, hardware, crockery, salt, salt-fish, and other imported products. It is also the entrepôt whence is despatched about one-half of the exports from Upper Burma southward. The total value of the exports and imports passing between Upper and Lower Burma during recent years has been about 400 lakhs of rupees yearly ; and rather less than half of this total is either consigned to, or despatched from, Mandalay. The bulk (more than 80 per cent.) of this traffic is carried by steamers and flats belonging to the Irrawaddy Flotilla Company. This Company run two steamers a week each way between Rangoon and Mandalay ; they take 10 to 12 days on the upward and 7 to 10 days on the downwards journey ; they also run once a week each way between Prome and Mandalay a single-handed steamer, by which mails and passengers, taking the railway as far as Prome, make the journey from Rangoon to Mandalay in  $3\frac{1}{2}$  days.

3. If the proposed railway served Mandalay only, it might be questionable whether new means of through communication were really necessary, when we have an excellent highway in the river Irrawaddy and first-rate steamers plying thereon. Still, even for the Mandalay trade alone, it will be a very great advantage to the country and to the people to have an alternative and more rapid means of communication. Tens of thousands of field labourers come down yearly from Upper Burma to the rice-lands of the delta, returning home after the harvest. The journey to and fro between Mandalay and Rangoon now occupies 8 or 10 days, even when immigrants use (as they generally do) the railway as far as Prome. By railway the journey would take two days, and the wages (at Rs 4 per week) of the extra days would go far towards paying a labourer's downward railway fare. So with costly merchandise, like piece-goods or silk fabrics, the saving of time in transit would be a distinct gain. The existence of an alternative means of conveyance would serve the public, introducing a healthy competition. The Flotilla Company

having defeated all competing steamers, and having nearly run native boats off the river so far as through traffic is concerned, have now a practical monopoly of the river trade; they make large (not to say excessive) profits, and their charges on high for water carriage. For instance, the fare for a deck passenger without food from Rangoon to Mandalay is Rs12-8-0 and from Prome (the railway terminus) to Mandalay is Rs10, whereas the railway will carry 3rd class passengers from Rangoon to Mandalay for Rs6, at a rate of three pies per mile for 344 miles.

There is little reason to fear that the opening of a railway to Mandalay, though it might bring down steamer fares and rates, would seriously injure the Flotilla Company, who have done much for, and deserve well of, the country. When the Lower Burma Railway opened to Prome in 1877, it was predicted by some that the Flotilla Company would be ruined, for Prome was one of their chief trading stations on the river. But the business of the Company is now larger than ever, and their trade has increased more rapidly during the past few years than it did before the railway was opened to Prome.

4. But Mandalay is by no means the only place which will be served by the proposed railway. The line will run through a land-locked country, far from the Irrawaddy river; it will skirt the base of the Shan hills, through which a large trade debouches into the plains by passes opposite Ningyan, Yamethin, Hlaingdet, and Kyaukse; it will carry cotton from fields about Hlaingdet and Wundwin to Mandalay; it will serve the considerable rice trade now existing between Ningyan and Yamethin; and it will convey rice from the irrigated lands of Kyaukse, the granary of Upper Burma, to the Mandalay market. Carts now ply on these routes by devious tracks across rice-fields, through jungles, over stony uplands, and through muddy streams. But the tracks are so rough and difficult, that cart-hire in those regions comes to six and seven annas per ton per mile during the five months for which the tracks are passable. During seven months the tracks are nearly impassable: carts, if they ply at all, carry light loads; and the cost of carriage comes to something over one rupee per ton per mile. No doubt these rates would be reduced if good metalled and bridged roads were made; but such roads would cost about Rs12,000 a mile, and even then cart hire would come to about four annas per ton per mile. Water carriage over any of the routes from Ningyan to Kyaukse is quite impossible, save after great outlay on canals, locks and reservoirs. Along the line of the proposed railway there are vast expanses of culturable waste, besides considerable areas which yield a surplus of rice, oil-seeds, cotton and pulse, beyond the wants of the local population. It is manifest that great additional value would be given to the cultivated lands and much impetus would be given to the clearing of waste land if the cost of carrying surplus produce to market were reduced from an average of eight annas to an average of one anna per ton per mile.

5. Some years back, when the railway was first made to Prome, it was intended to carry the line on to Allanmyo, and it was expected that the railway of the future to Mandalay would be carried up the Irrawaddy valley. But we have now learnt more of the country beyond Tounghoo, and we have ascertained that the hill range known as the Pegu Yoma sinks almost to nothing about Yamethin. For some time most people acquainted with Burma have been satisfied that the Mandalay Railway ought to start from Tounghoo rather than from Prome. The arguments in favour of the Tounghoo route are briefly as follows:—The distance from Tounghoo to Mandalay is probably from 60 to 80 miles less than from Prome to Mandalay; the country and the marts along the Irrawaddy valley are adequately served by the Irrawaddy river with its steamers and boats, whereas the tract from Ningyan to Kyaukse and Mandalay is absolutely without any means of through communication whatever; it is much better to carry a railway through a land-locked tract without communications than to put it down alongside a fine navigable river; the Tounghoo route serves the passes and caravan paths into the Shan States; some of the stations

will be within a dozen miles or so of the mouths of the Shan passes, whereas the Irrawaddy valley route would be scores of miles from the nearest of the passes into the Shan hills; the Tounghoo route is more likely to go near coal\* sources than the Prome route. For these reasons it seems clear that we are right in preferring the Tounghoo route to the Prome and Irrawaddy valley route.

6. Beyond Tounghoo the first obligatory point is Ningyan, a town of about 12,000 inhabitants, a place of considerable timber trade, and a mart to which Shan caravans much resort. The line from Tounghoo to Ningyan has been surveyed and aligned by the Railway Engineers. The distance is 59 miles; the levels show a rise of 140 feet between Tounghoo and Ningyan; the only large stream is the Swa, which will perhaps require 350 feet of waterway with two openings of 100 feet. Beyond Ningyan the line must go up the valley at places barely 15 miles broad, between the Shan hills on the east and the Pegu Yoma range on the west. This valley leads straight to Yamethin, which is the largest trade mart between Nyingyan and towns on the Irrawaddy river. Yamethin is at the water-parting† between the Irrawaddy and Sittang rivers. Yamethin is, probably, the highest point on the line to Mandalay; according to barometrical readings it is about 300 feet about rail-level at Ningyan, or 440 feet above Tounghoo. This section, from Ningyan to Yamethin, is about 55 miles in length; it crosses two considerable streams, the Ngaleik, close to Ningyan, and the Sinthe, which will require respectively about 600 and 1,000 feet of waterway. The Railway Engineers, Messrs. Beeston and Guinness, are now (second week of June) reconnoitring the line and making a traverse from Ningyan to Yamethin, in order that we may know, approximately, where stations will be placed; but the line will not be surveyed or staked out till November and December next.

7. North of Yamethin the line will take the best and straightest route for Kyaukse. Notes taken from the mouths of natives who know this route seem to show that the line would go by Pyawbwe, Nyaungyon, Wundwin, to a point on the Panglaung river near Myiththa, whence it would run straight into Kyaukse. We have as yet no reconnaissance of the route from Pyawbwe to the Panlaung river; but it seems fairly certain that no high grounds will be encountered. This section, from Yamethin to the Panlaung, may be about 55 miles; it will have to cross the Samon river, and may have to cross it twice. The Panlaung bridge will not be a formidable affair. The section from the Panlaung river to Mandalay is about 50 miles. Mr. Gordon is surveying this length from Mandalay to Kyaukse, and he has selected the site for the bridge over the Myitnge. He will have full sections and estimates ready as far as Kyaukse by September; he will have reconnoitred the length from Kyaukse to the Panlaung river, and he will have selected the site for crossing that river.

8. The several sections stand thus:—

	Miles.
I.—Tounghoo to Ningyan, already surveyed . . . . .	59
II.—Ningyan to Yamethin, being reconnoitred, well known . . . . .	55
III.—Yamethin to Panlaung river not yet reconnoitred or aligned, about . . . . .	50
IV.—Panlaung river to Mandalay, will have been surveyed and reconnoitred by September . . . . .	50
Add for possible under-estimates or deflections . . . . .	6
<b>TOTAL</b> . . . . .	<b>220</b>

\* *Note*.—It is not possible to be confident about coal sources until they have been examined and tested by competent professional men. Circumstantial reports have been made by Burmese and Shan informants of coal in the Shan States about 40 miles from Yamethin and of coal on the river Panlaung within 3 or 4 miles of the proposed railway alignment. The truth of these reports will be investigated as soon as possible. A Shan Sawbwa and a Burmese Thugyi both declared to the Chief Commissioner at Yamethin, on the 28th May, that they saw large specimens of coal taken from a pit on the Panlaung river and carried to Mandalay in the time of King Mindôn Min.

† *Note*.—The spill from a tank on the north of the Yamethin rampart goes into the Irrawaddy *via* the Samons, the Panlaung, and the Myitnge rivers, while the spill from a large tank under the southern rampart of Yamethin makes its way into the Sittang *via* the Sinthe river.



Thus we shall have full surveys and working plans ready for section I and for the greater part of section IV by September next; the Railway officers will have reconnoitred and practically aligned the railway for section II and the remainder of section IV by the same date; we ought to have surveys for the whole of sections II and IV by January; we shall have reconnoitred and aligned the line throughout section III by the same time. Ningyan, Yamethin, Kyaukse, and the crossing over the Panlaung will all be obligatory points. Mr. Beeston reports that over his section the line has been very carefully chosen, and is not likely to be changed. So far as he has gone, he looks upon the country as easier for a railway than the greater part of the Rangoon and Tounghoo line; and he found the foundations for his bridges favourable and cheap.

If Mr. Mathews, the experienced Chief Engineer,\* after examining the plans, grading, and bridge projects, and after inspecting doubtful or critical parts of the line, is able to approve the alignment and estimates, it is hoped that work may be begun at Tounghoo, on both sides of Ningyan, and at the Mandalay end in November next, and that orders may be sent home for the ironwork of the Swa, Ngaleik, Sinthé, Myitngé, and a few other large bridges. If orders to begin work are received in November, and if funds can be made available as they are required, there is no reason why the earthwork from Tounghoo to Yamethin should not be completed and much progress made with the brickwork before June next. If the bank is ready before the rainy season of 1887, ballast and rails could be laid after December of that year, and there is no reason why we should not open from Tounghoo to Yamethin, and from Mandalay to the Panlaung, by March 1888. Delay may be caused by the masonry and ironwork of the big bridges. But if orders to begin work come in November 1886, the kilns will begin to turn out bricks by the end of January 1887, and work ought to go on rapidly during the open season of that year. If this can be done, and if funds are available, we ought to be able to open through to Mandalay by March 1889, or within 2½ years of turning the first sod.

10. Concerning the advantages that would result to trade and agriculture in Upper Burma, something has been said in the foregoing paragraphs. It is not only the through traffic that would be benefited but the local traffic would be indefinitely improved and extended, if only cheap, certain, and rapid means of communication existed. For instance, the country around Wundwin produces cotton, millet, and pulse, but no rice; it gets its rice at great cost from Ningyan or Yamethin. Kyaukse grows no cotton or pulse, but has an immense surplus of rice. With carriage at one anna a ton, instead of eight annas a ton, the transport of these staples would be greatly facilitated and extended. But the greatest service which the railway would do for trade would be the development of traffic with the Shan States. The Shans are an industrious, lightly-taxed people, with a strong turn for trading of all kinds. They are the chief customers for the large trade in English goods to Mandalay. The population of the Shan country is not known, but it would be safe to say that 1½ to 2 millions of Shans would draw their supplies from and send their exportable goods to, stations on the Mandalay railway. The four chief passes from the Shan plateau have their mouths within 10 to 35 miles from the proposed line of railway. At present all the Shan trade comes to the Irrawaddy or to the Toungoo railway station on pack-bullocks; and the Mandalay Railway would reduce the length of pack-bullock transport for all the Shan trade by about 100 miles on the average. Hereafter we shall, doubtless, be able to make a cart-road on to the Shan plateau by one or other of the passes. Already carts ply on the Shan plateau for 40 or 50 miles on each side of Nyaunggywe and Inleywa; and it is said that in past years a few carts, lightly laden with salt, have made their way to the Shan plateau by the Pyindet pass opposite Hlaingdet. By this pass,

\* Note.—Mr. Mathews has successfully aligned and constructed railways in other parts of the world, besides aligning and constructing the Tounghoo Railway in Burma. He is thoroughly conversant with the requirements and behaviour of Burma watercourses.

Inleywa, the chief mart of the cis-Salween Shan plateau, will be distant about 25 miles from the nearest railway station on the proposed line.

11. The political results of the opening of the railway to Mandalay would be most important both on Upper Burma and on the Shan States. In Upper Burma great numbers of the people hardly believe that the British have conquered the country and have occupied Mandalay, while many more do not realise that we intend to stay and govern the country in behalf of the Queen-Empress. The effect of opening a State Railway to Mandalay or doubts of this kind would be conclusive. Then the employment and wages given on the railway would have an excellent effect in pacifying the country and reconciling the people to English rule. In the tract through which the railway will pass, the villages have been much harried by dacoits and rebels, and the people generally have been upset and disturbed by the anarchy of the past year. From November till March last there was practically no Government at all in the region from Ningyan to Kyaukse; and even now our troops and civil officers have not made themselves felt in the tracts around the upper part of Section III of the proposed line. The immediate effect on the people of having properly guarded and protected railway works opened over a considerable section of country would be very great; the people would have work to do in the slack season; money would be spent upon them; and they would see material evidence of the interest taken in their country by the British Government. Of course these effects of the railway works would be only temporary, but they would come at a time when the presence of such influences is most desirable, for our present object is to get the people of these tracts to settle down, to find scope for their energies, and to get a living for their families by quiet work. The lasting effects of opening the railway on the people would be that they would travel to and fro; they would understand the British power, the British system, and the British Government's carefulness for the good of the people; and gradually they might become willing subjects of Her Gracious Majesty.

On the Shan States and the Shan population the effect of the railway would be to reconcile them to British supremacy by opening their country and trade to the outer world, and by bringing them in contact with British officers, from whom they would learn that the Government does not wish to subvert their autonomy, to burden them with taxation, or to trouble them with regulations. The conduct of the Shan States and Shan people is an unknown and an important factor in the Upper Burma problem. Hitherto they have as a nation kept aloof from Burmese pretenders, Burmese rebels, and Burmese dacoits, though occasional parties of Shan marauders have been in the ranks against us; and the Shan Chiefs (Sawbwas) have sent letters expressive of friendliness to the British Government. But if the Shans were to take active part against us, or to support any of the Burmese pretenders, they would be a formidable addition to our foes, for the Shans are a braver race and more amenable to discipline than the Burmese. Moreover, any Shan force that was defeated in the plains could take refuge in the fastnesses of their hills, whither it would be an arduous and costly business to follow them. So far as the proposed railway may help in keeping the Shans friendly and in promoting our communications with them, it will do much political good.

12. The existence of the proposed railway will strengthen greatly our military position in the region traversed. We have now about 20 military posts in that tract, although at present the country between Hlangdet and Yewun (near Kyaukse), a stretch of over 50 miles, is wholly without troops. For five or six months of the year communications between these posts is difficult, and loaded carts cannot pass. The cost of sending supplies of all kinds to these posts, which are now provisioned for the next six months, has been about 17 annas per mile, besides requiring large numbers of troops for convoys. For any supplies sent forward during the rainy season from Ningyan the cartmen say they must charge Rs 3 per ton per mile. When the railway is made, with defensible railway stations,

we shall be able to reduce the number of posts by one-half ; it will be possible to send succour promptly to a threatened post at any time of the year ; the cost of moving troops and supplies will be about one-fifteenth of what it is now ; and the military position will be in every way immensely strengthened. As against possible trouble with the Shans, the railway from Tounghoo to Mandalay would be a great addition to our military strength. If attack from that direction were likely, we should under present circumstances have to strengthen some posts and call in others, because of the extreme difficulty of communicating and sending reinforcements in the present state of the roads or tracts. With a railway, information and communications would be prompt and certain ; any threatened post could be reinforced within a few hours at small expense.

13. Regarding the probable traffic that will come upon the line, it is not possible to give precise statistics, nor would it be any good attempting to count carts at particular points. Some general account has been given in the foregoing paragraphs of the traffic the line may be expected to draw and to foster. There will certainly be a good through traffic in goods and passengers with Mandalay ; and the Shan traffic towards Mandalay and towards the seaboard will be large and ought to grow indefinitely. The local interchange of produce and goods is likely to be much larger on the Mandalay line than it is at present on the lines in Lower Burma, for the railway will find considerable existing traffic ready to hand between such towns as—

Tounghoo,	Wundwin,
Ningyan,	Kyaukse,
Yamethin,	Nyaungyan,
Pyawbwe,	Mandalay,

all of which are on the line, and with places like—

Inleywa,	Nyaunggywe,
Hlaingdet,	Mahlaing,
Meiktila,	Minzaing,
Yindow,	Yenaung,

which are a few miles off the line. The two old lines in Lower Burma, though they connected important places like Prome and Tounghoo with Rangoon, passed no towns, except perhaps Paungde and Shwegyin, at all corresponding in size and importance to the places mentioned above.

14 From Tounghoo to Ningyan and from Ningyan to Yamethin the tracts along the line are sparsely peopled and contain few large villages. But beyond Yamethin the railway will pass through cultivated country and will touch many towns and large villages. All the traffic in this tract must come on the railway, for between Ningyan and Mandalay there is no alternative waterway, and very little of the traffic can make its way across to the Irrawaddy. The local traffic and the through traffic already existing on this line is certainly greater per mile over all the country beyond Yamethin than it was originally on either of the lines in Lower Burma. We know that the Prome Railway earned  $5\frac{1}{2}$  per cent. net within eight years of opening. And it seems safe to predict that, notwithstanding the comparatively uncultivated section from Tounghoo to Yamethin, the line to Mandalay will earn not less than 4 per cent. net within six years of its opening through to Mandalay. This prediction, it will be observed, rests not on any accurate return of present traffic, but on the experience gained by our railways in Lower Burma and on such general information as we possess concerning the present traffic on the route.

15. Regarding the labour available for the work, enquiries have been made along about 140 miles of the route. It is probable that the earthwork may average 5 feet in height throughout the line. The native officials in Upper Burma say that the people will gladly undertake earthwork, brick-burning, ballast-breaking, and carting. There are plenty of carts in the country. We know that much of

the earthwork on the Irrawaddy embankments and on the Tounghoo line was done by immigrant labourers from Upper Burma. For the sparsely peopled section between Tounghoo and Yamethin, labour will come from above and below, and perhaps on the banks nearest Tounghoo labourers may have to go from Lower Burma. There are plenty of carpenters in Ningyan; other carpenters, bricklayers and quarrymen can soon be taught, and Burmese are apt enough at such work. For platelaying and rivetting, skilled hands will have to be brought up from Rangoon. But over nearly the whole line unskilled labour will be furnished locally, and the villagers will be glad enough to get employment. The wages of labour about Yamethin range lower than about Rangoon or Tounghoo; but the rate of cart-hire is high.

16. In conclusion, special attention is solicited to the desirability of early orders being issued regarding the undertaking, so that brick-making may be promptly set going at the principal bridges; that bridgework and rails may be ordered from home as soon as possible; and that contracts may be made for the cutting and delivery of sleepers. It may be mentioned that the existence of fairly cheap\* river carriage to Mandalay makes it possible to begin the line at both ends at once. When the project is sanctioned, it will be very desirable that work should at once begin from Tounghoo, from Mandalay, and from both sides of Ningyan. When the surveys for Section II are ready and the plans approved, that section could be begun. In this way we could make sure of finishing the earthen banks from Tounghoo to Yamethin and from Mandalay to the Panlaung river by June 1887.

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*Supplementary Memorandum by the Chief Commissioner of Burma, dated 31st July 1886.*

Last month I submitted a memorandum regarding the projected railway from Tounghoo, the northern terminus of the Lower Burma railway system, to Mandalay, and I strove to show how greatly this railway was needed on commercial, political, military, and administrative grounds. I need not go over that ground again, but it may be well to annex to the present paper extracts (paragraphs 7 and 19) from a recent account of the measure taken to consolidate British power in Upper Burma. These extracts show how very important a part the proposed railway will play in restoring and maintaining peace over the eastern districts of the country.

2. It has been pointed out that a railway is a very costly affair, that neither India nor Burma can afford a rupee of avoidable expenditure, that in most countries roads precede railways, and that there are no roads in Upper Burma. And it is suggested that it would be better to spend such moderate funds as may be available on cross roads to the chief centres of trade, and on a trunk road that might hereafter be converted into a railway. There can be no doubt but that the Government are, under present financial circumstances, bound not to embark on costly work that can be avoided or postponed. But I believe that no system of roads that can be constructed within the next 30 years, and that no trunk road under any circumstances can confer on the province the commercial, political, military, and administrative advantages that will be produced by the proposed railway. And I venture to hope that within 10 years the proposed railway will, instead of being a burden, be a direct source of revenue to the province such as no system of roads, or trunk road, can ever be.

3. It is quite true that roads are greatly needed in Upper Burma. Outside a few towns and villages there is not a mile of made road or a single bridge. But the roads that are wanted are cross roads to the Irrawaddy river, or to some other main line of communication, whereby produce can be carried to the sea-board and

\* NOTE.—The Flotilla Company would carry material from Rangoon to Mandalay for Rs15 a ton, and perhaps they might be got to accept even a lower rate.

English goods can be transported into the interior. For the central and western districts the Irrawaddy river constitutes an excellent commercial artery. But along the base of the Shan hills there is a great land-locked tract, distant 100 to 60 miles from the Irrawaddy, and separated from that river by the broken, upland country which forms the continuation of the Pegu Yoma hills, and which culminates in the Popa peak, over 4,000 feet above the sea. At present very little surplus produce gets across to the river from this tract, and vast areas of fertile land that might be cultivated are left untilld because there is no outlet for the produce. Goods for, and a small quantity of costly produce from, the Shan States find their way to Mandalay on the north or to Tounghoo on the south, whence there is good water or land communication to the seaboard. Hardly any Shan trade in piece goods, salt, or hardware finds its way through the passes that debouch opposite Yamethin, Hlaingdet, and Wundwin, because there is no means of reaching the Irrawaddy from these passes. Even if three or four cross roads to the Irrawaddy were made from the foot of the Shan hills, the road transport would be so costly and so tedious that no surplus produce could be carried by them from Yamethin or Meiktila and probably very little of the Shan trade would ever take to such cross roads. These roads would be 80 to 100 miles long, and would cost 8 to 10 lakhs each. They would not effectually open up the country, because the cost of transport to the river would be so great.

4. A trunk road from Tounghoo along the foot of the Shan hills to Mandalay would be a great boon to the country; and it would make the work of administration easier. But such a road (about 240 miles long) would cost about 30 lakhs \* of rupees; and it would not be finished by annual grant from revenue under six or eight years. Even then such a road would leave about seven † large streams unbridged. Experience in India shows us that bridges over broad streams are never made for mere roads, though of course they have to be made for railways. The presence of unbridged streams on every section of the road would tend to

\* Two hundred and forty miles, at Rs10,000 a mile, is 24 lakhs; and 25 per cent for establishments brings the total up to 30 lakhs.

† The unbridged rivers should probably be—

the Swa;	the Sinthe,
the Yeni,	the Samon,
the Negalark,	the Panlaung,
	the Myitnge.

• The waterway required for bridges over these streams ranges from 150 to about 1,200 feet.

make the road practically impassable for wheeled traffic sometimes for days together. Some of these streams, notably the Sinthe, the Swa, and the Samon, are such that ferries can hardly take the place of bridges. The occurrence of broad, sandy, river-beds, even in the dry season, at intervals along a trunk road regulates the weight carried by each cart, and operates greatly to enhance the cost of carriage by reducing the weight that can be put behind each bullock. Practically a trunk road of this kind would get no *through* traffic at all, though it would be of great use to trade on the sections near Tounghoo and Mandalay, and would serve a good deal of intermediate traffic from place to place. The cost of carrying produce along such a road would be about four or five annas per ton per mile, which would effectually prevent bulky produce from moving more than 50 or 60 miles by such a route. For purposes of military defence such a trunk road could not compare with a railway; for troops and supplies would take ten times as long to travel and would cost five times as much as by railway. With a road it would take ten days at least to send succour from Mandalay or Tounghoo to Yamethin and a great number of carts would be required; whereas by rail troops and supplies could be sent in six or eight hours. Similarly, Kyaukse could be reinforced by rail from Mandalay in a couple of hours; whereas by road troops could cover the distance in about three days, if they had plenty of carriage and provided ample store of boats were collected at the Myitnge ferry.

5. If a trunk road instead of a railway were begun from Tounghoo to Mandalay, the work would not, for four or five years at any rate, have any appreciable effect

upon the commerce, or on the military and administrative arrangements of the country. Whereas if a railway is begun, it could be open from Tounghoo to Yamethin, and from Mandalay to Kyaukse, within 18 months of our turning the first sod, and the effect on the commerce of the country, as well as on military and administrative arrangements, would be felt within a month of the opening.

6. It may be allowable to cite instances in support of the view that a long trunk road in Burma will get no through traffic, and that a railway makes itself felt at once. A metalled and bridged road was made for 54 miles south of Moulmein and was opened in 1868; it has never yet attracted a through traffic at all. The old correspondence of 1853-56 is full of congratulations on the trunk road that had been carried from Arakan to Prome across the Tounghoo pass. But so far as is known, the through traffic on this road amounts to about two carts, 50 pack-animals, and a few hundred foot-passengers per annum. In the fine weather of 1882, I took about five days to pass over this road, and met one small party of Chins only on the whole length. The road to Prome from Rangoon was only partially bridged before the railway was made; it attracted no through traffic, and very little local traffic, except on the section from Paungde to Prome. A railway has now been opened for eight years on that route; it has attracted a large traffic; it has caused the occupation and cultivation of great areas; and it has earned a dividend of  $5\frac{1}{2}$  per cent. net. The Tounghoo trunk road was only partially bridged; it never got any through traffic at all; and, except on the length from Rangoon to Pegu, it got very little local traffic either. This trunk road had to compete with water carriage by the Pegu and Sittang rivers, and though this latter river is a most unsatisfactory stream, still it was navigable. A railway has now been opened between Rangoon and Tounghoo. Though the Sittang river had the advantage over the trunk road, yet the superiority of the railway over the river may be gauged from the fact that the relief of the Tounghoo garrison in 1881 by river occupied 25 days and cost R49,000; whereas the relief of the same garrison (strength unaltered) by rail in 1885 occupied two days and cost R2,000. Before the railway opened, paddy (rice in husk) never came from Tounghoo by road, but it sometimes came by river at a freight of R12 or R13 per ton. A considerable and increasing quantity of paddy now comes from Tounghoo by railway at a freight of R2-8-0 a ton.

7. It is unnecessary to go again over the ground taken in the June memorandum on the railway scheme, or in the extracts annexed to the present paper. But I venture to think it is abundantly clear that no system of cross-roads and no trunk road can ever have one quarter of the effect on the commercial and administrative progress of Upper Burma that the proposed railway is certain to exercise; also, that is to say, within 18 months of our turning the first sod, the very much smaller effect of the road will not be felt for the next five or six years.

8. It has sometimes been said that a trunk road is a first step towards a railway, which can be laid at leisure on the road. But experience in India has, I am told, proved it to be a mistake to attempt to utilise a road for a railway. At any rate Mr. Mathews, our Chief Engineer, who has made railways in Peru, in Spain, in England, and in Burma, and who has seen the result of laying the Prome railway, on the Prome road, very strongly advises against taking up a road for a railway, and against making a road with the idea of converting it afterwards into a railway. On the Lahore and Peshawar road a railway was laid for many miles some years ago, but the rails were taken up and laid elsewhere before the line could be opened. Road bridges can never be suited to carry a railway, and if road curves and gradients are made to suit a railway, the road immediately becomes very costly. At the very best, a road costing R10,000 a mile could hardly, on the route under discussion, make a difference of R3,000 a mile in the cost of a future railway, even if the road were wholly taken up for the railway. If we made a trunk road from Tounghoo to Mandalay in eight years at a cost of 30 lakhs, the fact of such a great outlay

having been incurred would of itself deter the Government from spending money on a railway in the same territory. And I believe that such a trunk road, instead of paving the way for a railway, would in reality put off indefinitely the beginning of a railway between Lower and Upper Burma.

9. The financial merits of the two projects stand somewhat thus. A trunk road from Tounghoo to Mandalay, with the larger rivers unbridged, might be finished in eight years at a cost of 30 lakhs. At the end of eight years the road would have cost—

	Lakhs.
Construction and establishment . . . . .	30
Interest on 30 lakhs for four years at four per cent. . . . .	4½
Up-keep at one and two-fifths lakhs a year for four years . . . . .	5½
Total (say)	40

Thereafter the road would cost yearly 1½ lakhs for up-keep and 1½ lakhs for interest on the 30 lakhs, or say 2½ lakhs a year in all. The road would yield no revenue; and the indirect benefit to the country, to the people, and to the Government would be confessedly less than one-quarter of the indirect benefits conferred by the railway.

10. At the end of eight years the railway would have cost—

	Lakhs.
Capital cost at three-fourths of a lakh a mile for 240 miles . . . . .	180
Interest on two-thirds of that sum, at four per cent. during three years of construction . . . . .	14½
Interest on 180 lakhs, less by net earnings, estimated at four per cent. the first year after opening, three, two, one-and-a-quarter,* and three-fourths per cent. in the following years, or 11 per cent. in all. . . . .	19½
Total	214½

At the end of the eighth year the railway, which would have been open throughout for five years, would be paying its way, and would not be costing the country a penny. It would have been conferring the fullest indirect benefits on the country for five years; and after the eighth year it would be earning a gradually increasing surplus revenue. Further, by bringing on the Lower Burma line an immensely increased traffic, the Mandalay Railway would contribute to swell the surplus yield of the old line.

11. Thus at the end of eight years the trunk road would be costing 2½ lakhs a year to the treasury; while at the end of the same period the railway would be costing the treasury nothing, but would be beginning to yield a surplus revenue. The railway would have been conferring full benefits to the country for five years; while the road would be only beginning to confer full benefits; at the same time the full benefits conferred by the road are confessedly less than one-quarter of those conferred by the railway.

It may be said that interest ought to be charged against the railway on the 34½ lakhs of interest that accrued before the line paid its way. If so, then a similar charge should be made against the road on the 10 lakhs for interest and up-keep to the end of the eighth year; and as the road never yields any revenue, the charge under this head would go on accumulating and increasing while the surplus earnings of the railway would in a few years wipe off this item. So any charge of this kind would tell against the road and in favour of the railway.

Again, it may be said that a road can be finished, in three years at least, as easily

as a railway. Perhaps it could; but it is certain that a road is never made with borrowed capital but by grants from revenue. No trunk road of similar length or difficulty in India has ever been made in three years. Look at the Mirzapore and Jubbulpore road, 243 miles; the Lahore and Peshawar road, 244 miles; the Jubbulpore and Nagpore road, 156 miles; the Nagpore and Raipore road, about 150 miles. All these roads were emergent works, greatly needed, urged on by energetic Proconsuls, and constructed by talented Engineers; yet, so far as my memory goes, not one of them was finished under eight years, and each of them has still one or more unbridged\* rivers at the present moment.

\* A bridge of boats maintained during the dry season only is not really a bridge.

if he gets orders to begin the railway by

† I have been obliged to quote the mileage of this railway and of the roads above mentioned from memory, for the library at Mandalay is not rich in official books of reference. But I believe the mileages given in the text will be found approximately correct.

On the other hand, Mr. Mathews, our experienced Chief Engineer, tells us that within two years and to Mandalay within three years of turning the first sod. I confidently rely on Mr. Mathews to fulfil his engagement in this matter if funds are granted as fast as they are required.

And I am emboldened to give this confidence because I saw, about 1866, the Jubbulpore extension of the East Indian Railway, about 231† miles, completed within three years of the Engineer's breaking ground.

12. I submit that in respect of—

(a) the extent and value of benefits conferred upon the country and upon the Government;

(b) the promptitude with which these benefits will be conferred;

(c) the eventual loss or gain to the public treasury;

the proposed railway from Tounghoo to Mandalay can show greatly superior claims on, and recommendations to, the consideration of the Government of India than the suggested trunk road along the same route.

*Extract from a Memorandum by the Chief Commissioner, British Burma, dated the 15th July 1896*

\* \* \* \* \*

7. One very weak point of our present position on the Shan border in this direction is the difficulty of communications. This border is, for 130 miles in length, from 60 to 120 miles distant from the Irrawaddy river, which is at present our only line of military and commercial communication through Upper Burma. The cart-tracks leading from the Irrawaddy to the Shan border are few; they are unmetalled and unbridged; and in the rainy season they are practically impassable for wheeled traffic for days together. The cost of sending supplies and munitions of war over these tracks has been hitherto about £1 per ton per mile in the dry season; and the rate at which reinforcements or supplies can travel is about 12 miles a day. During the rainy season the cost and the time occupied in moving troops and supplies may often be twice or three times the above rates. Thus until the Mandalay railway is opened through this land-locked tract, the safety of the country and the position of our garrisons on the Shan border will be matter of anxiety, and any movement of troops in that direction must be very costly and tedious. When the railway is opened, the political and military position will be very much safer; reinforcements can be promptly and cheaply sent from Mandalay or from Lower Burma wherever they may be wanted; and it will be possible to hold the border and to control that part of the country with much smaller and fewer garrisons than are under present circumstances required.

\* \* \* \* \*



19. But in Ningyan und Yamethin, in which latter district the rebel bands have never yet been dispersed, I do not see hope of complete pacification until better means of communication exist. About 800 additional troops, besides 200 military police, are, at the present time of writing, on the way to these two districts and the 3rd (or railway) levy will be employed there in the first instance. But until we get the railway into this land-locked tract, there seems little certainty of a thorough change for the better. There are five or six military posts on the 57 miles from Yamethin to Ningyan, yet the Commissioner telegraphed yesterday that he had only then got a letter through from Yamethin after a three weeks' interval. Besides these difficulties of communications, there overhangs these districts the risk of incursions from the Shan States, against which we cannot adequately guard save by excessive increase of the garrisons. If the beginning of the railway were permitted in November next, we might reckon with confidence on the line being opened to Yamethin by February 1888.

Note prepared in the Public Works Department, comparing the financial results of various proposals for the purchase and extension of the Burma Railway, with the probable cost to the State if the Burma Railway system is entirely retained by Government.

The assumptions are—

I.—That the existing lines cost, including exchange, 285 lakhs.

II.—That the cost of the new lines will be 225 lakhs, divided over the following years:—

										Lakhs.
1887	.	.	.	.	.	.	.	.	.	20
1888	.	.	.	.	.	.	.	.	.	100
1889	.	.	.	.	.	.	.	.	.	80
1890	.	.	.	.	.	.	.	.	.	25

} 225 lakhs.

III.—That the net earnings are as under—

										R
1887-88	.	.	.	.	.	.	.	.	.	10,00,000
1888-89	.	.	.	.	.	.	.	.	.	11,50,000
1889-90	.	.	.	.	.	.	.	.	.	13,00,000
1890-91	.	.	.	.	.	.	.	.	.	16,00,000
1891-92	.	.	.	.	.	.	.	.	.	19,00,000
1892-93	.	.	.	.	.	.	.	.	.	.....
1893-94	.	.	.	.	.	.	.	.	.	20,40,000, at which

figure it may be assumed that the earnings, being 4 per cent. of the total capital cost, will be about constant.

IV.—It is further assumed that the 285 lakhs of capital with which Government has constructed the existing lines are bearing interest at 4 per cent.

V.—That if the lines are handed over to a Company the transfer has effect from 1st April 1887.

#### MESSRS. FINLAY MUIR'S PROPOSALS.

Messrs Finlay Muir's proposals are—

- (a) To buy up the existing lines.
- (b) To receive a 4 per cent. guarantee on the purchase money and on the capital costs of the extensions +  $\frac{1}{2}$  of the surplus profits over the guaranteed interest.

The interest payable to the Company will be—

						Capital.	Rate.	Interest for year.
						₹		₹
At commencement of 1887-88	:	:	:	:	:	3,05,00,000	4	14,20,000
During	:	:	:	:	:	1,00,00,000		
At commencement of 1888-89	:	:	:	:	:	4,05,00,000	4	17,80,000
During	:	:	:	:	:	80,00,000		
At commencement of 1889-90	:	:	:	:	:	4,85,00,000	4	19,90,000
During	:	:	:	:	:	25,00,000		
At commencement of 1890-91	.	.	.	.	.	5,10,00,000	4	20,40,000

It has been calculated that the net earnings will not reach the figure representing the interest in any one of the above years, so that the question of surplus profits in these years does not arise.

The net charge to Government will, therefore, be—

						Payment to Company.	Net earnings.	Net charge.
						₹	₹	₹
1887-88	.	.	.	.	.	14,20,000	10,00,000	4,20,000
1888-89	.	.	.	.	.	17,80,000	11,50,000	6,30,000
1889-90	.	.	.	.	.	19,90,000	13,00,000	6,90,000
1890-91	.	.	.	.	.	20,40,000	16,00,000	4,40,000
1891-92	.	.	.	.	.	20,40,000	19,00,000	1,40,000
1892-93	.	.	.	.	.	20,40,000	20,40,000	Nil.

#### GENERAL DICKENS' PROPOSALS.

General Dickens' proposals are—

- (a) To buy up the existing line.
- (b) To raise the necessary money for the purchase about  $\frac{1}{3}$ rd in share capital and  $\frac{2}{3}$ rd in debentures.
- (c) To pay up half the share capital at once.
- (d) To raise the debenture capital wholly within 6 months.
- (e) To raise the remaining share capital is required.

#### Terms.

- I.—To receive  $3\frac{1}{2}$  per cent. guarantee on (c) +  $\frac{1}{4}$ th of the total net earning of the lines.
- II.—To have a  $3\frac{1}{2}$  per cent. guarantee on the debentures which will be raised at about 95.
- III.—To receive 4 per cent. on (e) for 7 years, or until such time as  $\frac{1}{4}$ th of the net earnings of the new lines amount to  $\frac{1}{4}$  per cent. of this capital, from which time the whole share capital (c) and (e) would be treated as in I.
- IV.—To receive a payment of one per cent. on the entire capital as commission to the house financing the scheme.

The figures given by General Dickens are corrected according to latest information.

The total capital required to be raised for actual purchase and construction being 285 + 225 = 510 lakhs, the total sum to be raised by the Company may, to allow for the 1 per cent. commission, be taken at 515 lakhs, and of this 175 lakhs may be taken as share capital and 340 lakhs debenture.

Under (c) R87,50,000 are to be raised at once; and it may be assumed that as much of the debenture capital is paid in at once as may be required to complete the purchase of the old lines; that, for the purposes of construction, the total to be raised on debentures is first exhausted and then the remaining share capital.

From the statistics of net earnings before given, it will be observed that in the year 1891-92,  $\frac{1}{4}$ th of the net earnings of the new lines is estimated to amount to R50,000, which is already more than  $\frac{1}{2}$  per cent. of the share capital supposed to be raised for the construction of the new lines, consequently commencing from that year the total share capital will receive a guarantee of  $3\frac{1}{2}$  per cent. +  $\frac{1}{4}$ th of the net earnings of the whole system.

If debentures bearing  $3\frac{1}{2}$  per cent. interest are raised at 95, the rate per cent. payable on funds for outlay raised by this means will be about 3 68.

Hence the interest payable on General Dickens' scheme would be—

Commission.		SHARE CAPITAL.			DEBENTURE CAPITAL.			Total Interest.
		Amount.	Rate.	Interest.	Amount.	Rate.	Interest.	
		R		R	R		R	R
Capital raised.	At commencement of 1888-89.	87,50,000	$3\frac{1}{2}$	} 3,06,250 {	2,17,50,000	3 68	} 9,84 400 {	12,90,650
	During 1888-89 . .	Nil.	...		1,00,00,000	...		
	At commencement of 1889-90	87,50,000	$3\frac{1}{2}$	} 4,21,250 {	3,17,50,000	3 68	} 12,09,800 {	16,31,050
	During 1889-90 . .	57,50,000	4		22,50,000	.		
	At commencement of 1889-90.	87,50,000	$3\frac{1}{2}$	} 5,96,250 {	3,40,50,000	3 68	12,51,200	18,47,450
	During 1889-90 . .	51,50,000	4					
	During 1889-90 . .	30,00,000	4					
	At commencement of 1890-91.	1,75,00,000	$3\frac{1}{2}$	6,12,500	3,40,00,000	3 68	12,51,200	18,63,700, which will be hereafter the fixed sum for interest.

NOTE.—The interest on capital raised during any year is taken at half the rate for the full year.

The amount of net earnings payable will be—

	R
1887-88 . . . . .	2,50,000
1888-89 . . . . .	2,87,500
1889-90 . . . . .	3,25,000
1890-91 . . . . .	4,00,000
1891-92 . . . . .	4,75,000
1892-93 . . . . .	5,10,000

Hence the total payments to the Company will be—

Year.	Interest.	Share of net earning.	Total.
	R	R	R
1887-88 . . . . .	12,90,650	2,50,000	15,40,650
1888-89 . . . . .	16,31,050	2,87,500	19,18,550
1889-90 . . . . .	18,47,450	3,25,000	21,72,450
1890-91 . . . . .	18,63,700	4,00,000	22,63,700
1891-92 . . . . .	18,63,700	4,75,000	23,38,700
1892-93 . . . . .	18,63,700	5,10,000	23,73,700

The net charge to Government will consequently be—

Year.	Payment to Company.	Net earnings.	Net charge.
	₹	₹	₹
1887-88 . . . . .	15,40,650	10,00,000	5,40,650
1888-89 . . . . .	19,18,550	11,50,000	7,68,550
1889-90 . . . . .	21,72,450	13,00,000	8,72,450
1890-91 . . . . .	22,63,700	16,00,000	6,63,700
1891-92 . . . . .	23,88,700	19,00,000	4,88,700
1892-93 . . . . .	23,73,700	20,40,000	3,33,700

#### LINE CONSTRUCTED BY STATE.

The following calculations show what the charge to Government will be, on the assumption that it constructs its own lines.

If money for the extension is raised at  $3\frac{1}{2}$  per cent., the interest charges will be, on the new capital—

	Capital.	Rate.	Interest.
	₹		₹
During the year 1886-87 . . . . .	20,00,000	$3\frac{1}{2}$	35,000
Commencement of 1887-88 . . . . .	10,00,000 }	$3\frac{1}{2}$	2,45,000
During year . . . . .	1,00,00,000 }		
Commencement of 1888-89 . . . . .	1,20,00,000 }	$3\frac{1}{2}$	5,60,000
During year . . . . .	80,00,000 }		
Commencement of 1889-90 . . . . .	2,00,00,000 }	$3\frac{1}{2}$	7,43,750
During year . . . . .	25,00,000 }		
Commencement of 1890-91 . . . . .	25,00,000	$3\frac{1}{2}$	7,87,500

The existing charge to Government for the present capital of 285 lakhs at 4 per cent. is 11,40,000; the total charge will therefore be—

	₹
1886-87 . . . . .	11,75,000
1887-88 . . . . .	13,85,000
1888-89 . . . . .	17,00,000
1889-90 . . . . .	18,83,750
1890-91 . . . . .	19,27,500

The net charge to Government on the railways therefore is—

Year.	Interest.	Net earnings.	Charges.
	₹	₹	₹
1886-87 . . . . .	11,75,000	8,50,000	3,25,000
1887-88 . . . . .	13,85,000	10,00,000	2,55,000
1888-89 . . . . .	17,00,000	11,50,000	5,50,000
1889-90 . . . . .	18,83,750	13,00,000	5,83,750
1890-91 . . . . .	19,27,500	16,00,000	3,27,500
1891-92 . . . . .	19,27,500	19,00,000	27,500
1892-93 . . . . .	19,27,500	20,40,000	—1,12,500 gain.

## SUMMARY.

The financial effects of the three schemes may then be compared thus:—

Net charge to Government according as the line is constructed by—

Year.	Government.	Finlay Muir.	Dickens.
	R	R	R
1886-87 . . . . .	3,25,000	3,25,000	3,25,000
1887-88 . . . . .	3,85,000	4,20,000	5,40,850
1888-89 . . . . .	5,50,000	6,30,000	7,68,550
1889-90 . . . . .	5,83,750	6,90,000	8,72,450
1890-91 . . . . .	3,27,500	4,40,000	6,63,700
1891-92 . . . . .	27,500	1,40,000	4,38,700
1892-93 . . . . .	1,12,500 <i>gain.</i>	<i>Nil.</i>	3,33,700
TOTAL .	20,86,250	26,45,000	39,42,750

Should the whole system ever pay more than 4 per cent. on the total capital expended, the financial improvement to the State would be each year, for every 1 per cent. over 4 per cent.—

	R
Line constructed by Government . . . . .	5,10,000
„ „ by Finlay Muir . . . . .	2,55,000
„ „ by Dickens . . . . .	3,82,500

## MESSRS. WARING'S SCHEME.

The proposals made by Messrs. Waring differ so widely from the others that no definite comparison between them can be made. One of the chief features of difference is that after a very short term of years the lower lines are to be again wholly in the possession of, and worked by, Government; whereas the other proposals are based on a sale of these lines to the Company.

Reading the proposal of the 16th February in juxtaposition with that communicated by the Chief Commissioner in his telegram of 12th April, it is inferred that the existing lines are to be temporarily ceded to the Company, the Government during the period of cession standing in the position of holders of 4 per cent. debentures to the extent of the whole Capital cost of the existing lines; and that the capital required for the further construction is to be provided partly by debentures at 4 per cent. and partly by share capital, but in what proportion it is not stated.

As there is no guarantee on the part of the State, there will be no net *charge*; and consequently, assuming the lower lines to be ceded to the Company, at all events until 1892-93, the sums shown as a net charge up to that time in the preceding table will be saved to Government. Under the same conditions, that is, with the lines still ceded, the *gain* to the State shown in that table for 1893-94 *viz.*, R1,12,500, would disappear; and if the lines paid 6 per cent., the gain which the State would have received by constructing them itself, amounting to R11,32,500, would also pass to the Company. But if the lower lines are resumed by Government the whole conditions change, and fresh data are necessary.

It is proposed, however, to show what the position of the Company would be in its earlier years, taking the same data that have been used in comparing the other schemes.

Assuming for this purpose then that the 225 lakhs required for the extension of

the line to Mandalay are raised wholly by share Capital, and at the same periods as in dealing with other schemes, the amount available for distribution as interest amongst the shareholders would be—

	Net earnings.	Interest payable to Government.	Balance.
	₹	₹	₹
1887-88 . .	10,00,000	11,40,000	—1,40,000
1888-89 . .	11,50,000	do.	—10,000
1889-90 . .	13,00,000	do.	1,60,000
1890-91 . .	13,00,000	do.	1,60,000
1891-92 . .	16,00,000	do.	4,60,000
1892-93 . .	19,00,000	do.	7,60,000
1893-94 . .	20,40,000	do.	9,00,000

If the deficiency in 1887-88 and 1888-89 were made good temporarily from capital the balance of net earnings in 1889-90 would be swamped for the repayment. Consequently the shareholders would receive no dividends up to the end of 1889-90, and they would receive subsequently about—

·75 per cent.	in	1890-91.
2·04	"	1891-92.
3·37	"	1892-93.
4·0	"	1893-94.

Had any of this capital been raised by 4 per cent. debentures, it is evident that there would have been a still smaller dividend up to this point for the shareholders ; but if the net earnings ever exceed 4 per cent. in subsequent years, then it might be to the advantage of the Company to have raised a proportion of the capital by debentures.

It is evident that these proposals can only have been made in the fullest confidence that the lines—even the extension to Mandalay—will yield at least 6 or 7 per cent. at a very early period.

But it cannot be said that Government shares this confidence ; in fact the general assumption seems to be that though the lower lines may pay well, the extension of the system would probably not work out to a very much larger dividend than about 4 per cent. on the whole capital, and that the upper lines, which is all the Company would have eventually to deal with, would not, if worked independently, reach this figure. Any contract of the nature proposed must apparently inevitably follow the fate of the Bengal Central. Apart from this, it would not be economical for Government or for the Company to work the lines north and south respectively of the present terminus as two separate concerns.

Lastly, the arrangement proposed would not place the Government in possession of funds for other projects, which would be the case under the other proposals of buying up the existing lines ; but it would be cheaper for the State to raise the money by borrowing direct in the London market.

#### MESSRS. ROBINSON AND THELWALL'S PROPOSALS

Are practically identical with those of Messrs. Finlay Muir, save that they require  $\frac{3}{4}$  instead of  $\frac{1}{2}$  of the surplus profits. Should the net earnings ever exceed 4 per cent., the loss to Government under this scheme, as compared with Finlay Muir's, would be ₹1,27,500 per annum for every 1 per cent. of net earnings over 4 per cent.

This Company is prepared either to buy the existing lines or to work them only.

No. 96 Ry, dated 25th November 1886.

From--The Secretary of State for India,

To--The Government of India.

Your Excellency's Railway letter No. 148, dated 20th September 1886, re-

\* *Secretary of State to Viceroy, dated 27th October 1886.*

"Your Public Works letter No. 148 of 1886. Construction of Mandalay Railway sanctioned as State line. Question of provision of funds deferred till later, the 20 lakhs required till end of financial year being met from your cash balances Despatch follows."

that I have decided on sanctioning the extension in question as a State undertaking. This decision I now supplement with the following observations bearing on the work.

2. I agree with Your Excellency in considering, for the various reasons advanced in your letter and its enclosures, that the Mandalay Railway must, for the present at any rate, be undertaken by State agency, and in view of this conclusion, so strongly urged by your Government and concurred in by myself, it is useless at the present time to discuss in detail the several propositions which have from time to time been submitted to Government for the prosecution of the work by private agency. I would point out, however, that a misconception appears to exist as to the

† Letter from Messrs. Waring Bros., dated 11th June 1886.

Ditto to ditto, dated 25th June 1886.

Ditto from ditto, dated 17th September 1886.

Ditto to ditto, dated 8th October 1886.

Ditto from ditto, dated 5th October 1886.

Ditto to ditto, dated 15th October 1886.

Ditto from Mr. R. C. Rapier, dated 16th October 1886.

exact nature of the proposals made by Messrs Waring Bros., which, as presented to this office by that firm, are not in accord with those described in paragraphs 12 and 13 of Your Excellency's letter. A copy of the correspondence† which has passed between Messrs. Waring and this office is enclosed for your

information.

3. The engineering features of the work, at the time of Your Excellency's writing, were that, out of a total mileage of 250 miles, 103 miles had then been surveyed and located, namely, 44 miles south from Mandalay and 59 miles north from Tounghoo. The intervening 147 miles had not then been surveyed in detail, although you state that you are "in possession of sufficient knowledge of the physical features and of the obligatory points on the route to establish the fact that the country is easily practicable for a line of railway." It will be necessary to proceed with a closer examination of the route to be followed, and of the required works, as rapidly and effectively as the condition of the country will allow, and I shall be glad to be placed in possession of the complete surveys and estimates as soon as they are framed and accepted by your Government, construction operations, wherever practicable, being meanwhile actively proceeded with. I note that the total cost of operations is put at 225 lakhs, which brings me to the consideration of the financial aspect of the matter.

4. Your Excellency's Government, in discussing the question of the provision of funds for the line, dwells on the objections to diverting for this purpose moneys intended for the frontier and famine lines now in progress, and arrives at the conclusion that the least objectionable method of providing the necessary funds will be to carry on and conclude negotiations with the promoters of the Nagpur-Bengal Railway, whereby you anticipate an immediate refund of about 111 lakhs on account of the purchase from the State of the Nagpur-Chhattisgarh line. Any such arrangement would be opposed to the principles laid down in paragraph 50 of my predecessor's Financial Despatch, dated 29th July last, No. 216, and I can only entertain proposals for such an important undertaking as that to which I have referred on its own merits.

5. It will be necessary, therefore, for you to consider, without reference to the prospects of the Nagpur-Bengal scheme, what sums you will be justified in appropriating to the construction of railways in Burma, and how those sums should be provided, bearing in mind the fact that these railways have been expressly sanctioned as a work of great military and political importance, which should not be allowed to interfere with the normal construction of public works in other parts of India.

6. In the meantime, the sum of 20 lakhs, which according to your estimate is all that will be required during the current financial year, can presumably be supplied from your balances.

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Dated 11th June 1886.

From—MESSRS. WARING BROTHERS,

To—The Under-Secretary of State for India.

In February last we had the honour to address to you a proposal, copy of which we annex hereto, for making railways in Upper Burma. Simultaneously, we sent to India an experienced Agent in the person of Mr. Lamprey, to place our views before the Viceroy.

His Excellency was pleased to afford Mr. Lamprey several interviews, during which the whole subject was fully discussed. His Excellency expressed his warm approval of the project and invited Mr. Lamprey to proceed to Mandalay for the purpose of submitting the same proposals to the Chief Commissioner.

Sir Charles Bernard, after duly considering the detailed plan, offering the early construction of railways without the burden of a guarantee, telegraphed to the Viceroy his entire satisfaction with our offer. He attached special importance to the early commencement of work by contractors having an adequate staff, as a means of tranquillising the population by at once providing work and wages. Communications to this effect have doubtless reached your Honourable Council.

Our Agent, Mr. Lamprey, pointed out to Sir Charles Bernard the fact that our proposal includes the temporary cession of the existing railways as they stand, with such net revenue as they already have, of which he entirely approved, considering such cession preferable to a guarantee.

We would propose to commence the work at several points at once, by availing ourselves of the Irrawaddy Flotilla to convey materials to Mandalay, so that we could work both north and south from that point as well as from Tounghoo.

The Chief Commissioner informed our Agent that the surveys from Tounghoo to Mandalay and Bhamo would be ready in August, and that the right time for beginning work is at the end of October, and also that at the same time there would be an exceptionally good opportunity for transferring the administration of the existing railways.

To enable us to begin at that favourable period, it would be necessary for us to make immediate arrangements to ship materials in August. This we are quite prepared to do, and as we would have the co-operation of Sir James Brunlees and his partners, as Civil Engineers, to the undertaking, in addition to our general facilities, we could easily accomplish it if you should authorise us to proceed on the bases already submitted, modified, however, so that the railway to be constructed should be from Tounghoo to Mandalay instead of from Promé to Mandalay.

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No. 988, dated the 25th June 1886.

From—J. A. GODLEY, Esq., Under-Secretary of State for India,

To—MESSRS. WARING BROTHERS.

I am directed by the Secretary of State for India to acknowledge the receipt of



your letter of 11th June 1886, relative to your proposals for taking over and extending the existing railways in Burma.

In reply, I am to refer you to my letter of the 9th March last, and inform you that the Secretary of State is not yet in possession of the views of the Government of India on the subject.

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Dated 17th September 1886.

From—MESSRS. WARING BROTHERS,  
To—The Under-Secretary of State for India.

In February last we had the honour to submit for your consideration a proposal for the construction of railways in Upper Burma, *vid* Mandalay, to the Chinese frontier, and again, in June last, we had the honour to confirm the terms of our February proposal, modified, however, so that the railway to be constructed should be from Tounghoo to Mandalay, instead of from Prome to Mandalay.

We now beg to confirm those proposals, with a further important modification of Article 4 of Mr. Charles Waring's letter, dated 16th February, namely, that, in consideration of the temporary ceding of the revenues of the existing railways, your proponents will create, out of a proportion of the said revenue, a sinking fund for the redemption of the capital required for the construction of the Extension Railway, so as to hand over free to Her Majesty's Government the new and existing railways within as short a period as the surplus earnings of the railways permit, after payment of 4 per cent. interest on the debenture and 5 per cent. on the share capital necessary for construction of the proposed railway.

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No. 1538 P. W., dated 8th October 1886.

From—HORACE WALPOLE, Esq., Under-Secretary of State for India,  
To—MESSRS. WARING BROTHERS.

I am directed by the Secretary of State for India in Council to acknowledge the receipt of your further letter of the 17th September 1886, in respect to the proposals submitted by your firm for the formation of a Company to take over and extend the existing railway system in Burma.

In reply, I am desirous to acquaint you that your later proposal for creation of a sinking fund has been noted in connection with your letter of 16th February 1886, but as you have already been informed, the general question of the agency by which the existing Burmese railways shall be extended is one on which the Secretary of State for India cannot decide till he is in receipt of the detailed views of the Government of India on the subject.

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Dated 5th October 1886.

From—MESSRS. WARING BROTHERS,  
To—The Assistant Under-Secretary of State for India.

Railway from Tounghoo to Mandalay.

With reference to our offer to construct a railway, contained in our letters dated respectively 16th February, 11th June, 17th September, and addressed to the Under-Secretary of State for India, and to meet the possible hesitation to commence such construction in the present disturbed state of Burma, we beg to state that we are willing to waive any claim to indemnity from the Government for possible personal injury to ourselves or our staff engaged on such construction occasioned by the Queen's enemies.

No. 1660 P. W., dated India Office, London, the 15th October 1886.

From—J. A. GODLEY, Esq., Under-Secretary of State for India,  
To—MESSRS. WARING BROTHERS.

I am directed by the Secretary of State for India to acknowledge the receipt of your letter of the 5th instant, the contents of which have been duly noted in connection with your previous letters on the same subject.

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Dated 16th October 1886.

From—RICHARD C. RAPIER, Esq.,  
To—The Secretary of State for India.

In August last I had the honour to address Your Lordship on the subject of proposals which I had made through Messrs. Waring Brothers for the construction of railways in Burma.

Your Lordship then informed me that you were waiting for the views of the Indian Government thereon.

I am informed that the expected report has arrived; and I am also informed that, in the favourable reference which it makes to our proposal, there is admixed a portion of some other offer, and this has had the effect of making our plan appear to be impracticable in the view of the Simla Council, and so they have fallen back on the idea of making the railway by the agency of the Public Works Department as their only alternative.

I have had a long interview with General Strachey, and he expressed the opinion that the authorities at home would attach great importance to the preference expressed by the Simla Council.

I desire respectfully to submit that the reasoning which leads up to that preference, having been based on an extraordinary misapprehension of our plan, may afford a ground for thinking that if our proposals had been fully understood the opinion given might have been different. Moreover, our plan of a sinking fund for making the new railway become Government property has been only recently put forward.

Another point raised by General Strachey was the possible danger to our staff from the enemy. This has been covered by an undertaking offered by Messrs. Waring Brothers to make no claim against the Government.

This risk is not great; for, in the case of the Suakim railway, I am informed that there were no casualties amongst the contractors' people, and, in face of a much more serious enemy, they succeeded in making 20 miles of railway in a few weeks.

Without imputing blame to any one, there can be no harm in remarking that the Public Works Department has been 15 years in making 330 miles of railway in Burma.

We can undertake to make the 240 miles to Mandalay in two years and a half, and it is quite within reach that we might get to the Chinese frontier in a further two years; and, if that were done, Great Britain would begin to recoup the cost of her efforts in Burma.

Without the infusion of private enterprise the country will lag for a generation.

Finally I would desire to mention to your Lordship that, whilst the financial plan which I have put before Mr. Godley is quite feasible at the present time, it will become less easy to carry out if it should be delayed until the revival in trade shall have caused the price of money to rise, and the market to become more exacting.

No. 30 Ry., dated 8th February 1887.

From—The Government of India,

To—The Secretary of State for India.

We have the honour to acknowledge the receipt of Your Lordship's Despatch No. 96 R. of the 25th November 1886, and while in accordance with the instructions contained in paragraph 3, submitting complete estimates of the Ist and IVth Sections of the Mandalay Extension of the Burma State Railway, to report the construction operations which, wherever practicable, are being actively proceeded with.

2. The estimates that we are in a position to lay before Your Lordship, and which together with their accompanying report are appended to this Despatch as enclosure (No. 2), were received under the Chief Commissioner of Burma's No. 5585-4 C. R. of the 16th September 1886, and show the worked-out estimated cost of the Ist and IVth Sections to be as follows :—

	Length.	Total cost.	Cost per mile.
	Miles.	R	R
Ist Section, Tounghoo to Ningyan .	59·30	31,86,666	53,738
IVth „ Myittha to Mandalay .	41·71	37,62,363	90,203

exclusive of any provision for rolling stock. The high rate of the IVth Section, we have to explain, is due to the cost of the terminal station and sidings down to the Mandalay river, as well as that of the large bridge over the Myitnge river being spread over such a short length.

3. With the foregoing detailed estimates we also submit a general abstract for the whole extension, the figures for the intermediate sections being approximations only, as the surveys are not yet complete. The total estimated cost of the extension so arrived at is Rs 1,86,65,169, which includes provision for rolling stock, and on the length of 240 miles, for which they are prepared, works out to Rs 77,771 per mile. This is considerably under the figure given in paragraph 8 of our Despatch No. 148 R. of the 20th September 1886.

4. The estimates of the Ist and IVth Sections appear to have been made with care, but they are liable to be upset entirely by difficulties in obtaining labour, epidemics or other causes. Our Consulting Engineer, after his inspection of the line, reports that he does not consider the mileage rate of the IIInd and IIIrd Sections should exceed that of the Ist and IVth, and as he states that there are literally no physical or engineering difficulties to be encountered between Tounghoo and Mandalay, we may reasonably hope that, if nothing unforeseen occurs, the approximate estimate now laid before Your Lordship will not prove to be far from correct. It is hoped, moreover, that the final alignment will not much exceed 220 miles in length.

5. The detailed estimates of the Ist and IVth Sections were on receipt criticised by our Consulting Engineer and Director General of Railways, and a perusal of their notes, both dated the 4th October 1886, copies of which we append (enclosure No. 3), show that some modifications were considered desirable, amongst others the substitution of 50lb section rails for those of 62lb proposed by the Burma Administration. The use of the 50lb section has since received Your Lordship's approval, and the result of the change should be a very considerable reduction in the charge for permanent-way entered in the estimates of these Divisions.

6. In November our Consulting Engineer proceeded to Burma, and after personal discussion with Mr. Mathews, the Engineer-in-Chief of the Extension, drew up a further memorandum on the project, a copy of which we also attach (enclosure No. 4), and in accordance with the views expressed in this note a complete revision of the estimate has been called for (enclosure No. 5). The preparation and submission of this will, however, take some time, and we have, therefore, thought it

right, while reporting the construction operations, to place Your Lordship in possession of the best information at present available of the approximate outlay anticipated.

7. The state of the estimates for the work having been explained in the foregoing paragraphs, it remains now to place as briefly as possible before Your Lordship in regular order the steps we have taken towards pushing on the construction of the line.

8. On receipt of Your Lordship's telegraphic sanction to the construction of the Mandalay Railway as a State Line, dated the 27th October 1886, the sanction was at once communicated to the Chief Commissioner of Burma with authority to start work, a preliminary grant being assigned. The necessary staff were collected as soon as possible, and in communication with Your Lordship, arrangements were made for expediting the supply of the English materials most urgently needed for the rapid prosecution of the work.

9. In November our Hon'ble Colleague, Sir Theodore Hope, accompanied by our Officiating Director General of Railways, Major-General Hancock, R.E., proceeded to Burma; and were joined there by Mr Molesworth, our Consulting Engineer, who had preceded them, and Mr. Mathews, Engineer-in-Chief of the Burma Railways. They first visited Mandalay, examined the general line of country selected for the railway alignment at that end as far as the Myitngé river; and in conference with His Excellency the Commander-in-Chief, the Chief Commissioner, and the principal Civil and Military authorities, settled the site and general arrangements of the Mandalay terminus. Returning from Mandalay to Tounghoo, they then marched over the lower section between Tounghoo and Ningyan, and discussed the general programme of operations for the ensuing season. Our Hon'ble Colleague has recorded the result of his visit in the form of a minute, to which we would invite attention (enclosure No. 6).

10. Later on, in December, Mr. Molesworth marched through from Tounghoo to Mandalay over the route to be traversed by the railway, and discussed points of difficulty on the spot with the officers employed on the survey. On his return he has submitted a further note on the project, a copy of which is also appended and of which we would invite a careful perusal.

11. Having fully considered the large amount of information that has been collected in the manner described, we have decided, with the concurrence of the Chief Commissioner, to accept the suggestions made in the 28th and 29th paragraphs of our Consulting Engineer's memorandum of the 27th December 1886, and to commence construction wherever practicable throughout the entire length. We had not at first contemplated commencing work on the II<sup>nd</sup> and III<sup>rd</sup> Sections of the railway this season, because the plans and estimates could not be prepared in time. It was also supposed that the country would probably be too disturbed to allow of operations with safety to our staff. Now the latter difficulty is reduced, and the Chief Commissioner, conjointly with Mr. Molesworth, recommends immediate commencement of work. It is obvious to us that if labour can be obtained, there are political and military advantages in employing it; and though there are, on the other hand, the known objections to starting work before complete plans and estimates have been made and scrutinised in due form, it is believed these can be minimised by proper orders. We have decided, therefore, to permit certain classes of work to be started throughout under such restrictions as appear to us necessary to ensure the construction work not interfering with the completion of the survey operations and the preparation of complete plans and estimates. This sanction has been communicated to the Chief Commissioner in our telegram of the 7th January, quoted in full on the margin of our letter No. 56 R.C. of the 12th January 1887 to his address, forming enclosure No. 9 to this Despatch.

12. The foregoing paragraphs 8 to 11 summarise our action in connection with

the construction work of the Mandalay Extension since the date of Your Lordship's sanction, and it will, we trust, meet with approval. We attach as an enclosure (No. 10) copies of two of the latest telegraphic weekly progress reports showing that a satisfactory start has been made.

13. The financial arrangements for the funds for the vigorous prosecution of the work are under consideration, and we propose to address Your Lordship in a separate communication on the subject.

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*Minute by the HON'BLE SIR THEODORE HOPE, dated 14th December 1886.*

It may be convenient that I should record a few facts and remarks regarding my recent visit to Burma.

2. I arrived at Rangoon on November 22nd, and proceeded next morning to Promé, *en route* for Mandalay, being accompanied by Mr. Molesworth, the Consulting Engineer for Railways to the Government of India, Major-General Hancock, the (then designate) Director General of Railways, and Mr. Mathews, the Manager and Chief Engineer of the Burma State Railway.

3. Mandalay was reached on the 27th, and the rest of the day was spent in riding, under the guidance of Sir Charles Bernard and accompanied by Mr. Bagley, Railway Executive Engineer, and Mr. Richard, the Superintendent of Works in Upper Burma, over the various sites proposed for the railway station, and the approaches to them. On the 29th a conference of all the principal Civil and Military authorities was held on this subject, the details of which will be learned from the Minutes appended. The result was the unanimous selection of the site to the south of the great walled enclosure termed the "City," which admits of the railway being prolonged into the city for commissariat and ordnance purposes, and across it in the event of an extension to Bhamo, as also of all the railway stock being withdrawn inside in the event of emergency.

4. The 28th was devoted to an expedition to the Myitngé river, with the object of deciding on the site of the bridge there, which will be the largest on the new railway. After about four hours spent in examining the locality, Mr. Molesworth and Mr. Mathews concurred in preferring a site about a quarter of a mile above that previously selected, and orders have been issued for the commencement of work accordingly. Having come by steam-launch, the whole party, comprising Sir Charles Bernard and His Excellency Sir F. Roberts, who took the opportunity of inspecting the military post at Palek, rode back to Mandalay (11½ miles) by the general line adopted for the railway. The country presents no engineering obstacles, and appears to be most fertile and well cultivated.

5. Before leaving Mandalay, Mr. Mathews made all preliminary arrangements then possible for starting work as soon as the land was obtained. The staff were beginning to arrive.

6. Returning from Mandalay to Rangoon, we proceeded on 4th December to Tounghoo over the open line, and started the next morning to march over as much as might be found possible of the first and second divisions of the extension, lying between Tounghoo and Ningyan. Our party was composed, as before, of Mr. Molesworth, General Hancock, and Mr. Mathews, but was supplemented by Messrs. Salmond and Beeston, Executive Engineers, over their respective divisions. On the 5th we reached the Tswa river (23½ miles), where occurs the next largest bridge on the extension. On the 6th the bridge site having been examined and certain further surveys suggested by Mr. Molesworth, we proceeded along the line, and camped at Gyobin (18½ miles). On the 7th my companions examined about 6½ miles more, including some doubtful alignment, and after parting from Mr. Molesworth, who is to go through to Mandalay over the whole line, returned to Gyobin. I myself was anxious to visit Ningyan for the purpose of conferring with the Civil

and Military authorities, and therefore rode there and back (50 miles) with the assistance of arrangements kindly made for me by the Officer Commanding. For the greater part of this trip my escort consisted of mounted infantry, commanded by Captain Tracey, 2nd Queen's, and I was much struck by the smartness and mobility of this newly-formed corps. At Ningyan I had four hours to spare for conferring with the Commissioner (Mr. Tucker), the Deputy Commissioner (Mr. Gladstone), Colonel Dicken, the Officer Commanding, and others, and obtained a good deal of useful information regarding the route of the railway, and the state of the country as bearing upon our operations.

7. On the 10th we reached Rangoon, and inspected the railway workshops at Insein, which will require considerable enlargement to meet the demands of the Mandalay Extension. Everything appeared in an efficient state, and General Hancock and I were especially pleased with the apprentices' school, which is almost unique in India in providing quarters for them.

8. The arrangements for the prosecution of the railway were naturally the subject of much discussion with Sir Charles Bernard and the various Civil officers whom we had the advantage of meeting, and between the Consulting Engineer, the Director General of Railways, and the local railway authorities. Before my departure, Mr. Mathews handed in a programme of operations for the next six months (copy appended), which had previously been worked out in concert with General Hancock.

9. As regards the route, that adopted between Tounghoo and Ningyan, with a few petty changes suggested, appears to be all that could be desired. Beyond Ningyan, the Civil officers at that place concurred in recommending that the line should run through Shwemyo and Nyounggain, and then pass finally to the west of the Samon river, *via* Pyawbin and Nyaungyan, to Wundwin. Mehtila would be left 16 miles to the west, but the productive country in that quarter would be touched as far as was consistent with a through line. Whether Yemethin itself should be actually passed through or not is for consideration. Mr. Molesworth will, no doubt, consult General Lockhart and Sir Charles Bernard before making any final recommendation as to the alignment. From Wundwin to Kyaukse will be pretty direct. Between the latter and the Myitnge Bridge, already alluded to, two routes offer themselves. The western is advocated by Mr. Bagley, but I understand that its advantages are not sufficient, in a country easy either way, to warrant a departure from the location already made to the eastward. From the Myitnge to Mandalay no difficulty worth naming occurs.

10. The utilisation of local labour is, of course, most necessary from a political and military point of view, but how far it will be feasible seems open to much doubt. The railway authorities are sanguine about obtaining a large supply, and on the Upper or Mandalay sections this may be so. But at Ningyan, Messrs. Tucker and Gladstone held that imported labour must be mainly relied upon, at least south of that place as far as Gyobin or Yadashay, if any rapid progress was to be attained. Really local labour, they pointed out, could hardly be said to exist, from one cause or another, and people must be attracted from considerable distances. Success in this respect depended, in their opinion, upon ensuring that the full wages paid reached the hands of the labourers, and they advocated payment through European officers rather than through Burmese or Indian contractors. It will be seen from Mr. Mathews' programme that he has (at my request) inserted special arrangements to this end, but the working out of the principle involves many difficulties which, I trust, his determination and detailed supervision may overcome. As to wages, I am assured that there is little chance of avoiding the payment in Upper Burma of the high rates prevailing in the Lower Provinces.

11. In the matter of transport of materials, it is believed that no difficulty will occur on the two sections, north and south, on which operations are now starting. A contract with the Irrawaddy Flotilla Company is under negotiation, for the con-

veyance of permanent-way and bridge-work to Mandalay and the Myitnge Bridge, but the terms are likely to be high, and the performance may be hampered by the unavoidable demands of the army and its departments.

12. With respect to the materials themselves, there appears to be no difficulty in providing timber sleepers, and contracts for these for three out of the four divisions in hand have already been let. It is not expected that there will be any difficulty in obtaining a full supply of bricks and of burnt clay ballast on the Tounghoo-Ningyan section; for that near Mandalay good stone is available. But the permanent-way and bridge-work to come from England are essential to effective progress, because it is intended to lay the former in the first instance, along the "cess," or side of the service road and railway formation, so as to use it for conveying labour, materials of all sorts and bridge-work above all, to the points where they are required. Without such aid rapid progress will be impossible. When the formation is complete and fairly consolidated, the permanent-way will be lifted on to it. Nothing has been wanting on our part to ensure the timely arrival of this material. The indents must have reached England before our telegraphic call for the material on October 29th, on receipt of the Secretary of State's sanction to the railway. But yet, on November 24th, the Secretary of State entered into a discussion with us as to the weight of the rails to be ordered, and we subsequently received from His Lordship proposals to alter the type of fish-bolt, and an enquiry as to the weight of shovels (showrahs) required. This would appear to indicate the loss of a month, and to presage, unless special efforts are made, the arrival of the material later than January, by the end of which it ought to commence.

13 The establishment required was known in September, and arrangements began on receipt of sanction to the line, but various delays have occurred; and though most of the Engineers have arrived, or are *en route*, there is considerable deficiency in subordinates. Mr. Mathews says that as yet no harm has arisen from the delay, as the land acquisition and numerous other preliminaries are still incomplete, but General Hancock will now make every effort to supply forthwith all deficiencies.

After some consideration, it has been decided that speedy and harmonious action will be best secured by retaining the open line and its extension under one Manager and Engineer-in-Chief. In Mr. Mathews we have a very competent incumbent of the post. But it will be advisable to gazette Mr. Rigg, who now holds a somewhat anomalous position as his Assistant, to be Deputy Manager of the open line, and to give Mr. Mathews a Personal Assistant for the extension who will remain at headquarters, to forward staff and material, and allow Mr. Mathews full opportunity of spending the bulk of his time in the personal supervision of the construction staff and operations. The question of the future control of the Upper Burma line was discussed with Sir Charles Bernard. Considering that the line is to be constructed from funds furnished on Imperial, not Provincial, responsibility, that Mr. Mathews will retire in March, and that other changes are possible, it was agreed that the control had better be placed in the hands of the Director General of Railways, reserving considerable local supervision to the Chief Commissioner, through whom various classes of communications from the Manager to the Director General of Railways are to pass.

14. I feel it quite impossible to give any assurance regarding the sufficiency of the estimates. They appear to have been made with care, but they are also low, considering the known costliness of everything in Burma. They are liable to be upset entirely by difficulties in obtaining labour, epidemics, and other causes, and no one can venture to say that they will not be exceeded. All concerned will do their best towards economy, but the line has to be made, whatever it may cost.

15. In conclusion, I must express considerable doubts whether Mr. Mathews and others are not too sanguine in expecting the rails to be laid (on the "cess") by the beginning of next June. Even the small outlay up to March 31st now

anticipated (10 lakhs instead of 20) is suggestive of such doubts. If all material arrives from England by the time it is wanted, if labour proves to be plentiful, and if no other hitches and *contretemps* occur, this may be possible, but neither General Hancock nor I wish to encourage on the part of the Government of India any confident anticipations of so fortunate a result.

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*Note by the Consulting Engineer to the Government of India for State Railways, dated 27th December 1886.*

1. In continuation of my previous notes on the Mandalay extension of the Burma State Railway, I have the honour to report that, in company with Colonel Mark Bell, V.C., R.E., I have marched over the line of country between Tounghoo and Mandalay, and that I have been surprised both at the extreme richness of the country I traversed and also at the facilities which the district offers for the construction of a railway. I have seldom seen any portion of India which has afforded greater promise of commercial success for a railway than that portion of Upper Burma through which it is proposed to construct the extension to Mandalay.

2. As I believe that I am the first officer of the Government of India that has marched throughout the whole length between Tounghoo and Mandalay, it may be interesting to give my impressions of the district as a whole.

3. The traffic that will probably be carried by the railway, when completed, may be divided into four classes—

- (i) the through traffic from Mandalay to the port;
- (ii) the traffic which will be developed in the Shan States;
- (iii) the produce of the forests and existing cultivation in the vicinity of the railway;
- (iv) the increased development of cultivation in the vicinity of the railway which will follow the construction of the railway.

4. I must leave it to others to decide what traffic is likely to accrue from sources (i) and (ii), and I have no doubt whatever that it will be very considerable; but I am confident that the traffic from sources (iii) and (iv) alone will be sufficient to assure a complete commercial success for the railway.

5. The country between Tounghoo and the Sinthe creek is covered with jungle and valuable teak forests interspersed with large tracts of rice cultivation. Near Ningyan, a town of 20,000 inhabitants, the country is highly cultivated, and an unbroken tract of rice cultivation covers many square miles.

6. There can be no doubt that much of the land between Tounghoo and the Sinthe creek, now covered with unproductive jungle, can and will be cultivated for rice on the completion of the railway, following the precedent of the lines of railway between Rangoon and Tounghoo and between Rangoon and Prome, where the development of rice cultivation by the railway has been enormous.

7. Beyond the Sinthe creek the character of the country changes somewhat. There is an absence of forest in the valley, the country is more open, rice cultivation abounds, and the land appears to be capable of growing almost any kind of crop,—juaree, cotton, tobacco, oilseeds, sesamum, wheat, and, in the irrigated parts, sugarcane. Enormous tracts of rich waving rice crops extending as far as the eye could reach met my sight in many places, when a view could be obtained from the higher ground; but though the principal produce of the district is rice, there is little doubt in my mind that so soon as the railway communication affords cheap and easy communication with the port and the markets of Europe, a large wheat trade will spring up in Upper Burma on land which appears to be admirably adapted for the cultivation of cereals.

8. The existence of such large crops of rice was the more surprising to me in that, owing to the disturbed state of the country, large portions of land that had



previously been cultivated were lying fallow, and it is only when close to such land that the eye can detect whether it is lying fallow, or whether it has never been cultivated. The rice crops appeared to me to increase in extent beyond Yamethin; and the glimpses I obtained from several high points of view, such as Pyawbwe, and Nyaungnyaung, on the line of road I travelled, impressed me profoundly with the extreme richness of the district. But this richness is even surpassed after crossing the Samon river into that region which is irrigated by the Panlang river and is justly termed the "*granary of Upper Burma*."

9. Before the railway was made, the district between Rangoon and Tounghoo offered far less promise of traffic than that held out by the district between Tounghoo and Mandalay; and yet, eighteen months after its completion, the Rangoon and Tounghoo Railway has given undoubted indications that it will be commercially a complete success, and the extension to Mandalay will, I am convinced, not only be a success in itself, but it will, as a feeder to the Rangoon and Tounghoo line, largely increase the receipts of that portion of the Burma State Railway.

10. When we bear in mind the enormous difficulties of transport, and the impossibility of bringing produce to a market at present, at any reasonable cost, the extent of rice cultivation in Upper Burma is very astonishing.

Roads can scarcely be said to exist in the district, and most of those tracks which are termed roads are difficult even in the dry weather, but impassable in the rains, and they are tortuous in the extreme, so much so that the road not unfrequently traverses a distance half as much again as the direct distance between two given points.

11. My own experience may afford some indication of the present difficulties of transport, when I mention that, although we travelled through the district at a very favourable time of the year, so far as roads are concerned, and although our carts were lightly laden, yet we had axles of carts broken on ten different occasions, wheels broken on three occasions, minor stoppages from broken carts innumerable, bullocks and buffaloes exhausted, lying down and refusing to proceed, necessitating fresh supplies from the villages through which we passed, and spare carts which accompanied us to replace those which might break down.

12. From enquiries made from the headmen of the villages at which we halted and from others I gathered that the country is rapidly quieting down and confidence is returning.

The greater portion of the district I visited may now be traversed with perfect safety, and although time must necessarily elapse before the country can be completely cleared of the dacoits that infest it, the work of pacification is steadily and satisfactorily progressing.

13. In Mandalay I have been greatly struck with the impulse that has lately been given to house-building. Throughout the business portion of the city houses, solidly constructed of brick, are springing up in large numbers where only bamboo huts previously existed; and in some places whole streets of houses are in course of construction.

14. In fact everything I have seen during my visit to Upper Burma has impressed me profoundly with a sense of the very great value of our new possession; and I am of opinion that, apart from military considerations, the policy that has decided on the rejection of all offers for the construction of the railway by the agency of a private company, has been a very wise one.

To have practically handed over the monopoly of transport and consequently the development of this rich district to a private company would have been a most suicidal policy.

15. It is obviously the policy of a Government, in such a case as this, to develop the resources of a country by the lowest rates practicable, whilst the policy of a company is to realise the maximum profits that can be wrung out of a railway.

The produce of Upper Burma must, under a wise administration, become a very

fomidable competitor with that of other countries, but it must not be handicapped by high rates; for, as a rule, a very slight difference, in railway transport to the port of shipment, may turn the balance in a keen competition, and it is very possible that the profits of a Railway Company might exercise a most baneful influence in retarding the development of trade.

16. The construction of a railway through this rich district is an extremely easy task. There are literally no physical or engineering difficulties to be encountered between Tounghoo and Mandalay. From Tounghoo the ground rises easily but steadily so as to represent nearly a flat country along the valley of the Sittang and up one of its tributaries named Ngawin chaung, which takes its rise in the watershed at Yamethin.

17. This watershed is quite flat, so that there is no abrupt transition,—no ridge to be crossed; and the line then descends, as easily as it has ascended, by the valley of the Samon river to the plains watered by the Samon and Panlang rivers, from which it crosses the Myitngé river to the plain in which Manladay is situated. The weather was changeable when I passed the watershed, consequently it is not possible to place implicit reliance on barometer observations, but I calculated that the elevation of the watershed could not be more than 400 or 450 above Manladay or Tounghoo.

18. The lower portions of the valleys are formed of rich alluvial plains flanked by higher land, which rather represents low flat plateaus than ridges. These plateaus or ridges run down in some cases near to the river, whilst in other cases the alluvial plain extends some miles from the bank of the river. The lower ground is suitable for river crops, whilst much of the higher ground is capable of growing dry crops.

19. In the project as originally submitted to the Government of India the total length was for convenient reference divided into four sections,\* namely,—

	Miles.
1.—Tounghoo to Ningyan . . . . .	59½
2.—Ningyan to Yamethin . . . . .	66
3.—Yamethin to Panlang river . . . . .	82
4.—Panlang river to Mandalay . . . . .	41½
TOTAL . . . . .	239

20. In reporting on the estimates of the 1st and 4th divisions I have already pointed out that, with but few exceptions, the line in those divisions is practically almost a surface line, a very small embankment on the average sufficing to carry the railway above the general level of the country; and after my reconnaissance of the rest of the line I am of opinion that the 2nd and 3rd divisions will certainly not be more difficult of construction than the 1st and 4th divisions; for although the cost of sleepers and the transport of materials will be greater, the cross-drainage will be smaller than on the 1st and 4th divisions, and with exception of the bridges over the Sinthe creek, the Pyaubwe river, the river near Nyaungnyaung, and the Samon river, there are but few bridges that will not come under the denomination of “minor bridges.”

An examination of the ground in the 1st division convinces me that the large cutting near the 41st mile can be greatly reduced, if not altogether avoided, by a slight detour.

21. The general directions of the 1st and 4th divisions have been determined by actual survey; but for the remainder of the line, between Ningyan and the Panlang river, that route which, after reconnaissance, appears to me to be the most desirable, follows the general direction of that road, which passes from Ningyan

\* Since that time these divisions have been sub-divided, making eight divisions altogether.—G. L. M.

through Thengon, Chindaungaung, and Ngazaing to about the 16th mile from Ningyan, where some lumpy ground may be avoided by a slight detour to the east of the road. Between the 19th and 21st mile the Ningyan road passes over some uneven ground, which, however, can also be avoided by keeping more to the east so as to hug the river, at a spot I visited with Mr. Oldham about 3 miles south of Shwemyo. Mr. Oldham informed me that he had reconnoitred a path from this point to the east of the abovementioned high ground, which will enable the line to avoid it, with an embankment, not exceeding 4 feet on an average, and I have recommended him to take this for a first trial line; and if he should find after connecting the flood levels with his survey that the line answers this expectation, to adopt it at once without trying the alternative line over the higher ground. Even the line over the higher ground would not entail work of a very heavy character.

22. Beyond Shwemyo I found that Mr. Rees was engaged in running a line through Bawlaing, crossing the Ngawin chaung near that place, and again re-crossing it about 7 miles from Yamethin; but after a reconnaissance of the country between Shwemyo and Yamethin I arrived at the conclusion that it would be better not to cross the Ngawin chaung, but to bear away more to the west from some point near Shwemyo so as to pass about half a mile or a mile to the east of Inbegon; thence following the general direction of the road which passes through Gyobintha and Nyaunglun, but somewhat to the east of it, afterwards crossing it near the junction of the two alternative roads leading to Yamethin, but keeping about a mile and a half to the east of Taukkyaingyin, to a station on high ground about half a mile to the west of Yamethin, which General Lockhart considers to be a desirable site for a cantonment. The existence of a large swamp to the east of Yamethin renders it desirable to keep as far as practicable to the west.

23. After passing Yamethin the line may take generally a direction of about north-west by north so as to keep to the east of Pyaubwe, the absolute position of this portion being decided by the most convenient crossing of the Pyaubwe river. It should then run in the best direction for crossing or rounding the high land east of the Minhla tank. This can only be decided by detailed reconnaissance. But I am inclined to think that the best line will pass 3 or  $3\frac{1}{2}$  miles to the east of the Minhla tank. It may then bear towards Wundwin, passing about half a mile to the east of it.

24. The line may then follow generally the direction of the road that passes through Kanhit and Pyabyu, keeping a little to the east of it and remaining on fairly high ground as long as possible, so as to shorten the embankment over the low ground subject to the spill of the Samôn river, and then turning sharply round so as to cross the Samôn river a mile or two south of Paungmein.

25. I have considered the question of carrying the line to the east of the Samôn river, so as to pass through Hlaingdet, and keep nearer to any coal-supply that may be found there; but I think it better to keep to the west, for if coal should be found of such quality and in such quantities, near Hlaingdet, to justify its use, it will be a long way to the east of Hlaingdet, and in any case a branch to it would be necessary; and this branch might as well commence on the west as on the east of the Samôn river.

26. After crossing the Samôn river the line may be carried in the most direct way to the selected crossing of the Panlang river.

27. The line I have suggested has been marked by me on the accompanying map; but it must of course be understood that this line is only roughly approximate and must be subject to such modification as may be found necessary in order to avoid swamps or uneven ground, or to select advantageous crossings of the larger rivers.

28. I would impress upon the Government of India the necessity of commencing the earthworks all along the line with the least possible delay, without waiting for

the final submission of the plans. There are many places where this may be done without the slightest risk, for example, between Nyanglun and Yamethin, and between Wundwin, Kanthit, and Pyabyu. A commencement of the earthwork might be made on these parts as soon as the construction staff could arrive, while between Shwemyo and Inbegôn and between Yamethin and Wundwin some detailed survey must be made to fix the absolute direction of the line; but if the survey Engineers were permitted to start work on such places, instead of returning to head-quarters to plot their work, it would effect a great economy in time.

29. It is of vital importance to make an early start so as to have the next season's rains over the whole of the embankments between Tounghoo and Mandalay. If immediate action be taken, construction staff at once despatched, earthworks thrown up, and temporary bridges constructed over the larger streams, I see no reason why the railway from Tounghoo to Mandalay should not be opened for traffic though not completely finished, before the end of the cold season of 1887-88. To carry out this programme will, however, require the utmost energy; but if this be not done a season will be lost, and it will not be possible to maintain an open line during the rains of 1888. Arrangements should at once be made for brick-making, collection of fuel and lime, and for ballast burning; but an indent for the balance of girders required for the whole line might be deferred until after the plans and sections have been sent in. Subordinates, both upper and lower, clerks, and Native surveyors are greatly wanted at an early date, as it appears that Burma cannot supply them. The total length of the line will not, I think, far exceed the original estimate of the Chief Commissioner, namely, 220 miles exclusive of the sidings and riverside branches at Mandalay; and the mileage rate of cost of the 2nd and 3rd divisions should not, in my opinion, exceed that of the 1st and 4th divisions.

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No. 39 Ry., dated 7th April 1887.

From—The Secretary of State for India,

To—The Government of India.

I have received and considered in Council your Excellency's Railway letter, No. 30, dated 8th February 1887, affording full information in respect to the present condition and prospects of completion of the Mandalay Extension of the Burma State Railway.

2. The operations in connection with this undertaking have been carried on with commendable vigour, as is evidenced by the fact that it is anticipated by your Consulting Engineer for State Railways that it may be even possible to open communication by railway between Tounghoo and Mandalay by June 1887. As my sanction for construction of the line was only conveyed to your Excellency's Government on the 27th October 1886, such celerity in the conduct of the necessary operations reflects great credit on all concerned, though, at the same time, I do not overlook the fact, as pointed out by your colleague Sir T. C. Hope in his minute on the line, that it is not improbable that unforeseen obstacles may delay the opening of the line at so early a date. The remarks made by your honourable colleague in his minute, on the necessity for the prompt despatch of material from this country for the undertaking, will not be lost sight of.

3. I am glad to learn from your letter and its enclosures that the estimate of cost of the line, originally put at 225 lakhs, has now been reduced to somewhat under 200 lakhs, but I defer any remarks on this aspect of the subject, as I perceive, from paragraph 6 of your letter, that a complete revised estimate of the project is being prepared by your direction, with which doubtless I shall be supplied in due course.

4. I note also that the mode of provision of funds for the line will form the subject of a separate communication from your Government.



## **SECTION IV.**

### **Other Railway Projects.**

- 1.—Nilgiri Railway.
- 2.—Dehra Dun Railway.
- 3.—Bengal-Assam Railway.
- 4.—Kotri-Delhi Railway.
- 5.—Delhi-Umballa-Kalka Railway.



## OTHER RAILWAY PROJECTS.

## 1.—Nilgiri Railway.

No. 101 (Railway), dated 22nd September 1887.

From—The Secretary of State for India, (Viscount Cross),  
To—The Government of India.

I have received your Excellency's Railway Letter, No. 156, dated 12th August 1887, confirming your telegram of 6th idem with regard to the proposal made by the Nilgiri Railway Company, that they should be allowed to raise in the London market the additional capital required for the projected extension of the Company's system to Ootacamund.

Nilgiri Railway Company:  
proposal to raise additional  
capital in the London market.

2. I enclose copy of the correspondence\* which has passed with Mr. Woolley on the subject. It is understood that no objection is entertained by your Government to the rescission or modification of Clause 54 of the Company's agreement, and I have caused Mr. Woolley to be informed that the necessary formal arrangements must be concluded in India directly between the Company and your Government.

\* Letter to Mr. Woolley,  
dated 24th June 1887.

Letter from ditto, dated 6th  
July 1887.

Letter to ditto, dated 1st  
September 1887.

No. 1194 P. W., dated 24th June 1887.

From—JULAND DANVERS, Esq., Under-Secretary of State for India,  
To—R. WOOLLEY, Esq.

In reply to your letter, dated the 22nd instant, I forward herewith copy of the letter addressed by Messrs. Arbutnot & Co. on the 20th November 1886 to the Government of Madras, in respect to the proposed Nilgiri Railway.

A communication respecting this line has recently been addressed by the Secretary of State for India to the Government of India, in which the Secretary of State has intimated his willingness to allow the Company, in compliance with their request, to raise its capital in London, provided that the Government are satisfied there is no legal objection to such a course, that the domicile of the Company remains in India, that its operations continue to be carried on under the Indian Companies Act, and that the approval of the Government is given to the work which the Company is prepared at once to take in hand. This communication was made to the Government of India on the 7th April last, since which date no further information has reached this Office on the subject.

No. 2, dated 6th July 1887.

From—R. WOOLLEY, Esq.,

To—The Secretary, P. W. Dept., India Office.

I have the honour to acknowledge the receipt of your letter No. 1194 P. W. of the 24th ultimo.

2. With reference to the following portion of it "the Secretary of State has intimated his willingness to allow the Company, in compliance with their request, to raise its capital in London, provided that the Government (of India) are satisfied there is no legal objection to such a course;" my solicitors, under my instructions, have submitted a case to Counsel (Messrs. H. H. Shephard, lately Acting Advocate General of Madras, and Willie Grant, who are now in England, and, presumably from their position at the Madras Bar, well qualified to advise



on the point), and I beg to enclose for your information copy of their opinions which I hope will be favourably considered by the Secretary of State.

The Nilgiri Railway Company.

*Question.*

Whether, having regard to the fact that the Company is an Indian Company with an Indian domicile, it can legally raise the whole of its capital in England, or part of it in this country, and the remainder in India?

*Answer.*

Apart from the restrictions contained in Clause 54 of the Indenture, we do not think that there is any legal objection to the raising of capital by the Company in England. If it may be rightly assumed from the terms of the letter of 24th June that the Secretary of State is willing to withdraw the prohibition contained in Clause 54, all that remains to be done is to have his consent to such withdrawal formally recorded by endorsement on the original indenture.

H. H. SHEPARD.

W. GRANT.

No. 1541—87 P. W., dated 1st September 1887.

From—HORACE WALPOLE, Esq., Under-Secretary of State for India,  
To—R. WOOLLEY, Esq.

With reference to previous correspondence which has passed between yourself and this Office in respect to the Nilgiri Railway Company, I am desired now to inform you that, from a communication recently received from the Government of India, it appears that no objection is entertained by that Government to the Company raising capital out of India, subject to the following requirements.

The Company remains, of course, an Indian domiciled Company, in consequence of which Sections 48 and 55 of the Indian Companies Act bar opening a share registry in London, while Section 35 of the same Act requires Indian stamps on the share warrants of the Company. Clause 54 of the Company's agreement will, moreover, have to be rescinded or modified by mutual consent, a course to which, the Secretary of State understands, the Government of India do not object.

The necessary formal arrangements to give effect to the above conditions must be concluded in India directly between the Company and the Government of India.

No. 61 (Railway), dated 8th June 1888.

From—The Government of India,  
To—The Secretary of State for India.

In continuation of our Railway Despatch No. 156, dated the 12th August 1887, we have now the honour to transmit for Your Lordship's information a copy of the Draft Agreement between the Secretary of State and the Nilgiri Railway Company, amending Section 54 of the Company's Scheduled Contract in order to give effect to the conditions attached to the consent of the Secretary of State to the Company's raising Capital out of India.

2. We have also to forward herewith a copy of the opinion of the Advocate

General of Bengal as to the sufficiency and accuracy of the Draft Agreement, a copy of which has been forwarded to the Government of Madras, who will now take the necessary steps to have the Agreement executed with as little delay as possible.

[Enclosure No. 1.]

*Enclosures Nos. 1 and 2 to Railway Despatch No. 61 of 1888.*

An Agreement made this            day            of            188 , between the Secretary of State in Council of India (hereinafter referred to as the "Secretary of State") of the first part the Nilgiri Railway Company, Limited, a Company registered under the Indian Companies Act 1882 of the second part and the Nilgiri Rigi Railway Company, Limited, a Company registered under the Indian Companies Act 1866 of the third part.

Whereas by an Agreement dated the 30th day of September 1885 and made between the Secretary of State of the one part and the said Nilgiri Rigi Railway Company, Limited, of the other part; the Secretary of State did undertake with the said Nilgiri Rigi Railway Company, Limited, that if prior to the 1st day of March 1886 a joint Stock Company should be duly registered under the provisions of the Indian Companies Act 1882 or any subsisting statutory modification thereof with an Indian domicile a nominal Capital of two millions five hundred thousand Rupees and powers sufficient for the purpose of a certain indenture set out in the schedule to the now reciting Agreement and therein and hereinafter styled "The Scheduled Contract," and if the Company should prior to the 1st day of March 1886 duly and formally execute in duplicate an indenture identically in the words and figures of the Scheduled Contract with the addition thereto only of the names of the persons executing the indenture on behalf of the Secretary of State the name of the said Company executing the indenture the names of the Directors of the said Company signing the said indenture and the date of the indenture and should on or prior to the said 1st day of March 1886 deliver to the Secretary of State the said indenture in duplicate duly and formally executed by the Company he the said Secretary of State would at any time afterwards at the request of the Nilgiri Rigi Railway Company, Limited, to be testified by some writing under its common seal execute and deliver the same indenture which should thereupon become binding upon the parties thereto.

And whereas the said Nilgiri Railway Company, Limited, was duly registered under the provisions of the Indian Companies Act 1882 on the day of            188            and on the            day of            188            the Scheduled Contract was executed in duplicate by such last-mentioned Company and the Secretary of State.

And whereas by Section 54 of the said indenture of the            day of            188 , it is provided and it was thereby expressly agreed and declared by and between the Secretary of State and the said Nilgiri Railway Company, Limited, that the contract entered into thereby by the Secretary of State was subject to the following conditions:—

- (a) That no public solicitations by advertisements or public solicitations in any other manner had been or should be made for subscriptions to the Capital of the Company in the United Kingdom of Great Britain and Ireland.
- (b) That no steps had been or should be taken by the Company for obtaining quotations of the shares thereof on any stock exchange in the said United Kingdom.
- (c) That no register kept in accordance with the provisions of the

Indian Companies Act 1882 or any subsisting statutory modification thereof of any of the shareholders of the Company had been or should be without the consent of the Secretary of State kept or opened in the said United Kingdom.

And that if there had been or should be any breach on the part of the Company of any one of such conditions it should be lawful for the Secretary of State on ascertaining that there had been such breach to forthwith determine the said contract and that thereupon every article clause and thing therein contained on the part of the Secretary of State should absolutely cease and determine without prejudice nevertheless to any rights which should have accrued or should accrue to the Secretary of State prior to or by reason of any such breach.

And whereas the Secretary of State has with the consent of the said Nilgiri Rigi Railway Company, Limited, testified by their being parties to and executing these presents agreed with the Nilgiri Railway Company, Limited, to allow them to raise any part of the Capital of such last-mentioned Company elsewhere than in the East Indies upon the terms and conditions following.

Now these presents witness and it is hereby agreed and declared that anything in the said Scheduled Contract or the said Indenture of the       day of       188   to the contrary notwithstanding it shall be lawful for the said Nilgiri Railway Company, Limited, by public solicitations by advertisement or otherwise howsoever to solicit and obtain subscriptions to the Capital of that Company either in the said United Kingdom or elsewhere provided always and it is hereby expressly agreed and declared by and between the parties hereto and these presents are entered into by the Secretary of State upon the following conditions:—

(1) That the said Nilgiri Railway Company, Limited, have not obtained and shall not obtain or seek to obtain any domicile other than a British Indian domicile and have not and shall not have or seek to have their Registered Office elsewhere than in British India.

(2) That the said Nilgiri Railway Company, Limited, have not and shall not have or keep any register of the shareholders of that Company at any place other than the Registered Office of the Company.

(3) That the said Nilgiri Railway Company have not issued and shall not issue to any person or persons Company or Companies corporation or corporations or association or associations any document evidencing the right or title of the holder thereof to any shares scrip or stock of the said Nilgiri Railway Company, Limited, or to become proprietor of shares scrip or stock of such Company elsewhere than in British India.

And it is hereby further expressly agreed and declared by and between the parties hereto that if there has been or shall be any breach of either of such last-mentioned conditions it shall be lawful for the Secretary of State on ascertaining that there has been such breach to forthwith determine the Contract contained in the said Indenture of the       day of       188   and also these presents and thereupon every article clause and thing therein and herein contained on the part of the said Secretary of State shall absolutely cease and determine without prejudice nevertheless to any rights which shall have accrued or shall accrue to the Secretary of State prior to or by reason of any such breach.

In witness whereof Colonel Charles John Smith, Royal Engineers, Joint Secretary to the Government of Madras, Public Works Department, Railway Branch, by order and direction of the Governor in Council of Fort St. George acting for and on behalf of the Secretary of State has hereunto set his hand and the respective common seals of the Nilgiri Railway Company, Limited, and the

Nilgiri Rigi Railway Company, Limited, have been hereunto affixed the day and year first above written.

[Enclosure No. 2.]

*Case.*

With reference to the Honourable the Advocate General's opinion on Case No. 49 of 1887 (case and opinion sent herewith in original), a Draft Agreement between the Secretary of State for India and the Nilgiri Railway Company (Limited) removing the restrictions contained in Section 54 of the Company's Scheduled Contract as to the Company's raising Capital out of India, and giving effect to the conditions, subject to which the consent of the Secretary of State to the alteration was obtained, has been drawn and is sent herewith. What the conditions imposed by the Secretary of State are, must be gathered, it is presumed, from the old correspondence.

Supposing them to be (i) that the Company is to keep only one share register, and *that* at its Registered Office in India; and (ii) that the Company is not to attempt to deprive the Indian Revenue of the one-anna stamp on its share certificates, the Agreement now sent would appear to be in order.

The Government of India desire to obtain the opinion of the Honourable the Advocate General as to whether the proposed amendment is in a legal aspect both sufficient and accurate.

(Sd.) R. LEYCESTER UPTON,  
*Solicitor to the Government of India.*

The 19th April 1888.

The Honourable the Advocate General is accordingly requested to advise upon the Draft Agreement submitted herewith.

*Opinion.*

Under the circumstances stated, I am of opinion that the Draft Agreement is both sufficient and accurate.

*The 23rd April 1888.*

(Sd.) G. C. PAUL.

## 2.—Dehra Dun Railway.

No. 201 (Railway), dated 31st October 1887.

From—The Government of India,

To—The Secretary of State for India.

With reference to correspondence ending with Your Lordship's Railway Despatch No. 126, dated 16th October 1884, and our Railway Despatch No. 170, dated 10th November 1884, we have the honour to report, for Your Lordship's information, that we have just granted to the Dehra Dun Railway Association an extension to the 31st March 1889 of the term during which the capital required for the construction of the projected line of Railway from Hurdwar to Dehra must be raised ; such extension being final.

2. In connection with a request made by the Secretary and Agent of the Association, that "the question of the amount at which the cost of working the proposed Railway should be estimated" may be referred to Your Lordship for favour of Sir Alex. Rendel's opinion, we have informed the Association that that any further professional opinion required by them should be obtained in the usual way independently of Government.

3. We send, for Your Lordship's information, a copy of the principal correspondence that has passed on the subject since the date of our last Despatch.

No. 1356 W. R., dated 20th September 1887.

From—The Secy. to the Govt. of the North-Western Provinces and Oudh,

To—The Secretary to the Government of India, Public Works Department.

I am directed to acknowledge your letter No. 914 R.C., dated 2nd September 1887, regarding the proposed line of Railway from Hurdwar to Dehra.

2. With reference to paragraph 2, I am to say that His Honour the Lieutenant-Governor and Chief Commissioner concurs in the advisability of the proposal made herein of continuing the concessions previously offered to the Dehra Dun Railway Association for a further period, and considers that the date suggested by the Government of India, *viz.*, the 31st March 1889, would be a suitable limit within which the Association must find the requisite capital for constructing the proposed Railway line.

3. In order now to clear the ground of any future discussion on the subject I am desired by His Honour to enunciate again specifically the lines and limits of the several concessions beyond which this Government would not be prepared to go ; they are as follows :—

- i.—To repay the cost of preparing the project up to a limit of Rs10,000 in the event of the Association failing to establish a company to construct the Railway.
- ii.—To give land free of cost under the same conditions as have ruled for the Bengal and North-Western Railway Company.
- iii.—To give a postal subsidy for the carriage of mails ; the amount to be determined hereafter and to be based on the actual expense incurred in doing the work. It would not necessarily be a multiple of the actual cost as asked for by the Agent of the Association in his letter of the 3rd May 1886 to the Government of India.

- iv.—Government to do its best to promote a fair agreement for working the line between the Dehra Dun Railway Company and the Oudh and Rohilkhand Railway Company or whatever agency may be working the latter line when the Dehra Dun Railway is completed.
- v.—The Government, North-Western Provinces and Oudh, to endeavour to provide reasonable facilities for procuring such timber and other forest produce as may be required for and during the construction of the Railway.

In regard to this it should be distinctly understood that, in respect of sleepers or other forest timber produce, all transactions between the Railway and the Forest Department must be conducted on strictly commercial principles and no concession of rates or dues can be promised. In respect, however, of other forest produce, such as Bugri, Gravel, Boulders, &c., required for building purposes, the Lieutenant-Governor of these Provinces will be prepared to consider the concession of Royalty to some extent subject to certain conditions of working, &c.

- vi.—The Company to have the right to levy rates and fares within certain maxima stated by them in their letter to the Government of India, dated 10th March 1884, *viz.*:—

*For Passengers.*

Upper class, 2½ annas per mile.

Lower ditto, 3 pies per mile.

*For Goods.*

1st class, 1 pie per maund per mile.

2nd ditto, 2 pies ditto ditto.

3rd ditto, 3 pies ditto ditto.

4. I am also desired to recapitulate the clauses which it is desirable to enter in any contract which may be drawn up to give effect to the concessions above specified: they are as follows:—

- (a)—Land to be given for 99 years only; the location of the line to be approved by Government.
- (b)—Right of Government to acquire or purchase the line at periods of 30, 50, and 99 years.
- (c)—Rates for troops, police, and prisoners to be  $\frac{1}{4}$ ths of the rates prevailing at the time for the public.
- (d)—Railway Act and amendments to have effect; Government to have the right to make periodic inspections and to be able to enforce maintenance by closing the line or imprisoning stock.
- (e)—Accounts and statistics to be furnished to Government in forms prescribed for State Railways.
- (f)—Government to have the right to inspect the books and accounts when desired.
- (g)—The Company to pay  $\frac{7}{10}$ ths of the cost of such Police Force as may be required.

5. In conclusion, I am to say that the Lieutenant-Governor observes that the Government of India does not propose to continue the discussion of the question of constructing the line on the basis of the objections previously urged as to the probability of its proving remunerative; and I am to add that the advisability of no official opinion being conveyed to the Association in regard to the merits of their project is fully concurred in by this Government.

Dated 22nd September 1887.

From—C. W. HOPE, Esq., Secy. and Agent, Dehra Dun Railway Association,  
To—The Secretary to the Government of India, Public Works Department.

I have the honour to acknowledge the receipt of your letter No. 930 R.C., dated the 9th instant, and to convey the thanks of my Association to Government for having sent the additional copies of the documents therein mentioned.

2. Referring again to your letter No. 913 R.C., dated the 2nd instant, I have the honour to forward an extract from the Minutes of Proceedings of a Meeting of the Association held here on the 10th instant, together with a copy of the Note by Messrs. Campbell and Hope therein referred to, and, accordingly, to request that the question of the amount at which the cost of working the proposed Railway should be estimated may, as soon as possible, be referred by the Government of India to the Secretary of State, with a view to an early opinion being obtained by him from Sir A. M. Rendel, his professional adviser, and forwarded to the Government of India for communication to the Association. Should that opinion be in favour of their contention, as it is confidently anticipated it will be, the Association will then be in a position to proceed to endeavour to raise capital for the construction of the Railway. The Association make this request with confidence, as the Government of India have declined to be responsible for the opinion of their Consulting Engineer for State Railways in this country, and must, therefore, be desirous, with reference both to the Hurdwar-Dehra-Rajpur and to other similar projects, to have an authoritative opinion as to the method by which working expenses ought to be calculated.

3. The Association desire me to say that in their future procedure they will always observe the condition laid down in your letter, namely, that the Government of India is not to be considered as in any way responsible for the documents therewith communicated to them, and that they will, therefore, be careful not to represent the Government as being so responsible. I am also desired to thank the Government of India for having communicated to them copies of Mr. Hunt's Reports and Estimates, and to enquire whether they are right in presuming that, should they ultimately decide to proceed to the formation of a Company to construct the proposed Railway, Mr. Hunt's maps, plans, sections and drawings also, or copies of them, will be placed at their disposal.

4. The documents which the Association wish to be transmitted to the Secretary of State as to the case for Sir A. M. Rendel's opinion are the following :—

- 1.—The project prepared and submitted to the Government of the North-Western Provinces and Oudh with my letters of 28th May and 21st October 1885.
- 2.—Letter from the Government of India, Public Works Department, to Secretary and Agent, Dehra Dun Railway Association, No. 201 R.C., dated 8th March 1886.
- 3.—Letter from the Secretary and Agent, Dehra Dun Railway Association, to Secretary to Government of India, Public Works Department, dated 16th March 1886.
- 4.—Letter from the Government of India, Public Works Department, to the Government, North-Western Provinces and Oudh, No. 292 R.C., dated 14th April 1886.
- 5.—Note by the Consulting Engineer to the Government of India for State Railways on the financial aspect of the proposed Hurdwar-Dehra-Rajpur Railway, dated 31st May 1886.

- 6.—Letter from the Government of India, Public Works Department, to Secretary and Agent, Dehra Dun Railway Association, No. 552 R.C., dated 9th July 1886.
- 7.—Reply by the Dehra Dun Railway Association to Note by Consulting Engineer to Government of India, dated Simla, 27th July 1886.
- 8.—Revised Estimate by Association, with accompanying note, dated 14th July 1886.
- 9.—Note by the Consulting Engineer for State Railways on the project for the Hurdwar-Dehra-Rajpur Railway, dated 10th August 1886.
- 10.—Letter from Government, North-Western Provinces and Oudh, Public Works Department, No. 841, dated 23rd April 1887, submitting to Government of India Mr. Hunt's reports and estimates.
- 11.—Mr. Hunt's reports, estimates, maps, plans, and sections, submitted with No. 10.
- 12.—Reply of the Dehra Dun Railway Association to a second note, dated 10th August 1886, by the Consulting Engineer for State Railways.
- 13.—Appendices to No. 12 "Reply," &c.
- 14.—Note by Consulting Engineer for State Railways on the Hurdwar-Dehra-Rajpur Railway project, as revised by Mr. Hunt, dated 15th June 1887.
- 15.—Letter from Government of India, Public Works Department, to Secretary and Agent, Dehra Dun Railway Association, No. 913 R.C., dated 2nd September 1887.
- 16.—This letter.
- 17.—Extract Minutes of Proceedings of Meeting of Dehra Dun Railway Association held on 10th September 1887.
- 18.—Note by Mr. A. Campbell and Mr. C. W. Hope, dated 9th August 1887, in reply to Note by Consulting Engineer, dated 15th June 1887.

The Association will be glad to furnish copies of any of these documents which the Government of India may require to enable them to submit the case to the Secretary of State in a complete form.

5. Looking to the delay that has occurred in passing orders on Mr. Hunt's report, involving the loss of the next working season, I am directed to express a hope that the request now made by the Association may meet with the earliest possible consideration.

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*Extract from Minutes of Proceedings of a Meeting of the Dehra Dun Railway Association held in the Himalaya Bank, Mussoorie, on Saturday, the 10th September 1887.*

The Secretary and Agent read a letter, No. 913 R.C., dated the 2nd September 1887, which he had received from the Government of India in the Public Works Department, written in reply to his letter of the 7th June last. With this letter were forwarded printed copies of Mr. Hunt's reports and estimates on the alternative lines for the Railway surveyed and examined by him, and of extracts from a Note thereon by the Consulting Engineer to the Government of India for State Railways, dated the 15th June 1887.



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In forwarding these documents, the Secretary to Government said he was directed to explain—

“That the report is merely sent in compliance with your expressed wish, and that the Government of India is not to be considered as in any way responsible for the views propounded in the report, for the estimates which accompany it, nor for the opinion of Mr. Molesworth. If the Association should desire to proceed with the project, they must do so entirely on their own judgment, and at their own risk.”

The Secretary and Agent said that these documents had been carefully examined and considered by Mr. Campbell and himself, and he laid on the table a Note embodying their remarks and criticisms on them, and read some extracts from it, and stated the purport of the conclusions therein drawn.

The Meeting unanimously adopted the Note prepared by Messrs. Campbell and Hope, and resolved that it be printed, and that copies be sent to the Government of India and to the Local Government.

It was also resolved, unanimously, that—as the probable cost of constructing the proposed Dehra Dun Railway, according to Mr. Hunt's estimate, even as increased by Mr. Molesworth, has turned out to be so moderate, and believing that the cost of working the line cannot be abnormally high, and must leave a good profit—the Association persevere in their efforts to carry out the undertaking.

It was further resolved that, it being necessary to establish beyond further dispute the accuracy of the Association's contention as to the amount at which the cost of working the line should be estimated, the Government of India be asked to refer the projects prepared by the Association and Mr. Hunt, together with all the various Notes (including the Note now adopted by the Meeting) on the subject of working expenses, to the Secretary of State, with the request that he may be pleased, as soon as possible, to take the opinion of Sir A. M. Rendel, M.I.C.E., the Consulting Engineer to the Secretary of State, on the whole question.

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*Reply of the Dehra Dun Railway Association to a Note, dated 15th June 1887, by Consulting Engineer for State Railways, on the Hurdwar-Rajpur Railway project, as revised by MR. E. L. HUNT, Executive Engineer.*

#### PRELIMINARY.

The survey carried out by Mr. E. L. Hunt was undertaken by the Local Government at the instance of the Government of India, *vide* extract from a letter, No. 292 R.C. of 14th April 1886, printed on page 1 of the reply of the Association to the first Note of the Consulting Engineer for State Railways. Mr. Hunt's appointment to make the survey was communicated to the Association in a letter, No. 169 W.R., dated 8th November 1886, from the Government, North-Western Provinces, P. W. Department, and it was then said that after Mr. Hunt had prepared his Report, Major Gracey, R.E., the Engineer-in-Chief, would go over the line. On Major Gracey's transfer to Burma being gazetted, the Association wrote to Government and urged that he should make his inspection before he left the North-West. The reply, No. 699 W.R., dated 17th March 1887, was that Major Gracey could not come, but that Mr. Hunt was an officer of long standing and experience, and his Reports and Estimates would be accepted (after consideration) by the Local Government, and Mr. Hunt was ordered to go over the line with the representatives of the As-

sociation, and discuss moot points with them, should they wish it. That had, however, already been amply done, and the Local Government were told so in reply, in a letter dated the 6th April, and at the same time asked to communicate copies of Mr. Hunt's Report and Estimates and the remarks made on them by Government to the Association, as soon as they were sent up to the Supreme Government. Copies of the Association's reply to the Consulting Engineer's Note of 10th August 1886 were at the same time sent to the Local Government with the request that the question of working expenses might be reconsidered in the light of the arguments therein put forward, and with reference also to the revision of the project made by the Association in July 1886, and to the further revision of it since made by Mr. Hunt. No notice whatever was taken of these requests, and it was not until the month of June last that demi-official enquiry elicited the fact that Mr. Hunt's Reports and Estimates had been submitted to the Supreme Government on the 23rd April, but without the arguments of the Association on the question of working expenses. These were therefore at once forwarded direct to the Government of India, with a letter dated the 7th June.

2. From the letter, No. 913 R.C., dated 2nd September 1887, from the Government of India, with which has been forwarded copies of Mr. Hunt's Reports and Estimates, and copies of a Note by the Consulting Engineer thereon, dated the 15th June last, it does not appear whether the Local Government in submitting Mr. Hunt's Reports and Estimates made any remarks thereon; but it may be presumed that something was said, and also that nothing was said which detracted from the authority and value of Mr. Hunt's investigation and Reports. The Association are therefore entitled to presume that Mr. Hunt's Reports and Estimates have been "accepted" by the Local Government, *vide* the letter of 17th March quoted above. And, though the Government of India are "not to be considered as in any way responsible for the views propounded in the Report, for the Estimates which accompany it, nor for the opinion of Mr. Molesworth," the fact remains that Mr. Hunt's survey was made, and his Reports and Estimates prepared, at the instance of the Government of India, and under pressure put by them on the Local Government. The Report and Estimates have been printed by the Government of India, and copies have been given to the Association, who are told that if they should desire to do so, they must proceed with the project "entirely on their own judgment and at their own risk."

3. Even though, therefore, the remarks of the Local Government have been withheld and the Government of India have studiously refrained from saying a word which might be construed into approval or adoption of Mr. Hunt's conclusions and estimates, the action of the Supreme Government must not be undervalued. They have caused the subject to be thoroughly investigated from an engineering point of view by an engineer of long standing and experience, whose Report and Estimates the Government under whom he serves said they would accept. This was done, because the Local Government has refused to accept as correct the estimates prepared by the Association, and because the Consulting Engineer to the Government of India had endorsed this refusal, and also pronounced that the line would be an even more expensive one to work than the adviser of the Local Government had said it would be. Neither Government have said a word to lessen the weight of Mr. Hunt's conclusions; and the Supreme Government, while forwarding copies of it, have disclaimed any responsibility for the opinion of Mr. Molesworth, who has pronounced Mr. Hunt's Estimate of cost to be slightly inadequate. It remains now to show that Mr. Molesworth's Note may be wholly disregarded by the Association as a factor in determining their future course of action.

*Remarks on Mr. Molesworth's Note of 15th June 1887.*

4. The Consulting Engineer begins by stating that a competent Engineer (Mr. Hunt) having gone over the ground and reported practically on the project, it is now placed in an entirely new and in a far more favourable light. The improvements on the project attributed to Mr. Hunt are—(1) the ruling gradient has been reduced from 1 in 40 to 1 in 75; (2) the tunnelling has been shortened by 2,000 feet; (3)  $3\frac{1}{2}$  miles containing the heaviest earthwork have been abandoned; (4) the curves have been improved, the alignment altered, and the costly ravine (*sic*) and embankment all avoided. "So that," says the Consulting Engineer, "every condition affecting the cost of construction or the working expenses has been entirely altered." In attributing all this improvement to Mr. Hunt the Consulting Engineer has now ignored entirely the revision of the project previously made by the Association themselves, although their revised estimate and accompanying Note, dated 14th July 1886, were duly sent to him by the Government of India, and were referred to by him in his second Note, dated the 10th August 1886. By that self-revision (1) the section of the line between Dehra and Rajpur, containing the heaviest earthwork, was reduced from 7·8 to 4·6 miles in length, and from R75,773 to R61,176 in mileage cost; and the whole line was reduced from 37·46 to 34·3 miles in length, and from R70,000 to R67,042 in mileage cost; (2) the tunnel on the Dehra-Rajpur Section, 650 feet in length, was struck out; (3) the ruling gradient of 1 in 60 on the Hurdwar-Dehra Section was reduced to 1 in 70; (4) two grades of 1 in 40, 5,783 and 4,728 feet in length respectively were struck out in the revision of the Dehra-Hurdwar Section, and only one grade of that degree left, 5,581 feet in length, at the very end of the line, and three other steep gradients were also cut out of that section, namely, 1,005 feet of 1 in 58·75, 1,860 feet of 1 in 73·8 and 4,900 feet of 1 in 70; (5) more room was got for the terminal station for Rajpur, and a crossing of the road there was avoided; (6) six sharp curves of from 800 to 1,350 feet radius were got rid of on the Dehra-Rajpur Section, and the minimum radius was increased to 1,000 feet; (7) the heavy earthwork and retaining walls on that section of the line, and a bridge of 30 feet span were all cut out; and (8) five level crossings were saved in the whole length of the line.

5. Of the improvements attributed by the Consulting Engineer to Mr. Hunt, the only items not effected last year by the Association are (1) shortening the tunnelling by 1,370 feet (not 2,000), which Mr. Hunt was enabled to do chiefly because Government allowed him to interfere with the road at Hurdwar, though they had directed the Association to avoid it entirely; (2) Mr. Hunt has said that the ruling gradient on Section I should be improved to 1 in 75, though at the cost of some increase of earthwork; (3) Mr. Hunt, by an alteration of the alignment of the Dehra Station, has increased the radius of the curve leaving it from 1,000 to 1,428 feet; and (4) he has somewhat straightened the alignment and flattened the curves on the Hurdwar-Dehra Section—the minimum radius being now 2,000 feet instead of 1,320, of which latter radius there was only one curve of 1,691 feet on the Association's list. It is not the case, as stated by Mr. Molesworth, that Mr. Hunt has reduced the ruling gradient of the whole line from 1 in 40 to 1 in 75. Mr. Hunt has made no alteration whatever in the grading of the Dehra-Rajpur Section proposed by the Association, and he expressly says that the final grade of 1 in 40 cannot be avoided. On the whole, it may be distinctly asserted that there has been no material alteration made in the conditions affecting the cost of construction,

“or the working expenses,” since Mr. Molesworth wrote his Note of the 10th August 1886, in which, indeed, he admitted that the line had been altered by the Association’s revision in some of its most vital points,—reducing the gradients and shortening the length. And in the face of the fact that the ruling gradient of the first 29 miles had then been reduced to 1 in 70, and that those of the remaining 4·3 miles had been improved as already stated, it is incomprehensible that Mr. Molesworth should, in his Note of August 1886, have stated, as he did twice over, that gradients of 1 in 58, 1 in 60, 1 in 70, and 1 in 80 were freely scattered over the whole line, and that therefore it would not be practicable to dispense with two engines for the train throughout. The alteration in the conditions affecting the cost of working since Mr. Molesworth wrote in August 1886, as also mainly in those affecting the cost of construction, exist entirely in his own imagination.

6. The Consulting Engineer says he has not been able to obtain any section of the modified line, nor either maps or plans showing the new alignment, nor drawings of the bridges and stations: it is therefore somewhat surprising that he should have proceeded to criticise the estimate even only on general grounds. It is not for the Association to conjecture why the project should again have been sent to Mr. Molesworth in an incomplete state; but they may note that their representatives at Simla last year urged that their maps and plans should be sent to Mr. Molesworth, and offered to lend their office copies for the express purpose.

7. With regard to the rejection by Mr. Hunt, after surveying and estimating for it, of the Motiehur route, and to Mr. Molesworth’s concurrence in this, it may be observed that in their Report of 1885 the Association gave good and sufficient reasons for rejecting that route, and that if those had been duly weighed by Mr. Molesworth, and by the advisers of the Local Government, Mr. Hunt’s expenditure of time and money in surveying 22 miles of difficult ground and preparing the project by that route would have been saved. The first reason given by the Association—that by that route the traffic would have to be lifted over hills and led down again—seems sufficient. Mr. Hunt soon saw that the line would be a bad one, but he considered that his instructions left him no choice but to complete the survey and estimate of it.

8. Mr. Molesworth gives an abstract of the cost per mile of each head of work taken from Mr. Hunt’s estimate, and contrast the total,  $\text{R}79,094$  per mile, with that of the Association’s original estimate,  $\text{R}70,000$  per mile, with the view of showing that they allowed less for a line of a far more difficult character. It will hardly be believed that Mr. Hunt’s total of  $\text{R}79,094$  includes an entry of  $\text{R}9,912$  for rolling stock, another of  $\text{R}579$  per mile for land, and another of  $\text{R}582$  for plant, for which no provision is included in the estimate of the Association. Deducting these, the mileage total becomes  $\text{R}68,021$ . As there are other differences between the two estimates which prevent comparisons of totals, it would be convenient here to bring together the heads of each and to make the necessary adjustments, and to show also in juxtaposition the alterations Mr. Molesworth thinks should be made in Mr. Hunt’s estimate. In the Association’s estimate an allowance was made at the end for contingencies by one entry of 6 per cent. on the total, without establishment; but as Mr. Hunt and Mr. Molesworth have included contingencies, though at the rate of 5 per cent. only under each head of work, the amounts of the Association’s estimate have, in the following table, been recalculated in the same way, retaining however the original rate of 6 per cent. The figures of the Association’s revised estimate are shown aggregating  $\text{R}67,042$  per mile.

	PER MILE OF RAILWAY.		
	Association's Revised Estimate.	Mr. Hunt's Estimate.	Mr. Molesworth's Estimate.
	R	R	R
Preliminary . . . . .	926	495	500
Land . . . . .	<i>Nil</i>	579	577
Earthwork . . . . .	4,194	5,897	5,880
Minor Bridges . . . . .	12,939	15,297	14,500
Large Bridges . . . . .		3,597	3,900
Tunnels . . . . .	6,178	6,414	4,250
Level Crossing, &c. . . . .	413	711	709
Road diversions . . . . .	340	<i>Nil</i>	<i>Nil</i>
Fencing . . . . .	240	853	851
Male and Gradient posts . . . . .	10	(in earthwork)	(in earthwork)
Telegraph . . . . .	<i>Nil</i>	146	750
Ballasting . . . . .	4,223	3,270	3,261
Permanent Way . . . . .	23,913	22,711	25,000
Stations and Offices . . . . .	3,899	1,530	1,528
Station Machinery* . . . . .	1,820	2,495	2,490
Workshops . . . . .	<i>Nil</i>	44	1,800
Staff-quarters . . . . .	1,623	1,619	1,800
Plants . . . . .	<i>Nil</i>	582	1,000
Rolling Stock . . . . .	<i>Nil</i>	9,912	10,000
Establishment . . . . .	6,818	4,978	5,000
Deduct Rolling Stock . . . . .	67,042 ...	79,094 9,912	83,794 10,000
Add Land . . . . .	67,042	69,182	73,794
" Telegraph, at Mr. Hunt's rate . . . . .	577	...	...
" Workshops, at Mr. M.'s rate . . . . .	146	...	...
" Plant, at Mr. M.'s rate . . . . .	1,800	...	...
True Comparative Totals . . . . .	70,565	69,182	73,794
Or, adding Rolling Stock . . . . .	10,000	10,000	10,000
GRAND TOTALS . . . . .	80,565	79,182	83,794

9. The Association's original estimate per mile was R70,000 without and R80,000 with rolling stock. Their revised estimates are R70,565 and R80,565. Mr. Hunt's estimate R69,182 without and R79,182 with rolling stock, and Mr. Molesworth's estimates are R73,794 and R83,794 without and with rolling stock. After making the above adjustments Mr. Hunt's estimate of total cost turns out to be R47,437 less than that of the Association, and R1,59,058 less than Mr. Molesworth's, while the Association's estimate is only R1,11,621 less than Mr. Molesworth's. But deducting land which Government gives free, and which has been added only for the sake of comparison, the Association's estimate is R1,31,412 less than Mr. Molesworth's. Major Gracey's estimate of 1886, which Mr. Molesworth, on general grounds, thought certainly not in excess, was R1,00,000 per mile, including rolling stock,—an excess of over R31,000 per mile, or more than 10½ lakhs in total amount, over what is now proved to be necessary.

10. After what has already been said, it might seem unnecessary to consider Mr. Molesworth's Note any further; but the following remains to be said.

*Earthwork.*—The Consulting Engineer agrees with Mr. Hunt that the line has in some places been graded too low by the Association, but he has omitted to mention that Mr. Hunt has allowed for that. The printed report states that 1-16th had been added to the Association's quantities on that account. It is

\* This item was left out of his abstract of Mr. Hunt's estimate by Mr. Molesworth.

believed that this is a misprint for 1-6th. The Association's original all-round rate for earthwork was ₹4 per 1,000 cubic feet, and this was retained in the revised estimate, though the high embankments were cut out. Mr. Hunt's rate is the same, and in accepting this as sufficient, Mr. Molesworth gives the Association no credit for having thus practically increased the rate for the easier work.

11. *Tunnelling*.—Mr. Molesworth considers Mr. Hunt's rate too low. Mr. Hunt's rate was ₹6,414 per mile, but when giving his own abstract estimate Mr. Molesworth puts down ₹4,250 as the mileage rate: this is not a misprint, for the column adds up correctly.

"*Fencing*.—Mr. Hunt's rate is ₹853 per mile. Mr. Molesworth says that ₹1,600 to ₹1,700 should be added to this rate, which would make it ₹2,453, or ₹2,553, but yet in his own estimate he enters only ₹851.

13. *Telegraph*.—Mr. Hunt states, from knowledge of the existing practice, that the Government will remove the present Telegraph line from the road to the railway, at their own cost, and he provides merely for rent to be paid to Government for the use of the line for eighteen months during construction. Mr. Molesworth ignores this explanation, and raises the rate to ₹750 a mile, so as to provide for the construction of a new line of telegraph for the railway. The Association knew that Government constructs all lines, but omitted to provide rent during construction. The rate entered for rent by Mr. Hunt appears, however, to be very high to pay for use of a public wire, being nearly 20 per cent. of what Mr. Molesworth would construct a new line for.

14. *Permanent Way*.—Mr. Hunt has estimated the rate per mile for ballasting and permanent way at ₹25,982, and has given full details to justify this rate. Mr. Molesworth has raised this rate to ₹28,261, but has given no reason for doing so. Mr. Hunt, it is believed, took pains to ascertain from the proper quarter the current prices for the materials landed in Calcutta and rates for carriage up country, and the Association are not aware that these have lately risen. It may be noted that Mr. Hunt was ordered to increase the weight of the rails from 62lb per yard,—the weight proposed by the Association, as being that on the main line of the Oudh and Rohilkhand Railway,—to 75lb; but the rate per mile allowed by the Association for ballasting and permanent way was so ample, that Mr. Hunt's estimate for heavier materials actually amounts to less.

15. *Workshops*.—Neither the Association nor Mr. Hunt provided for workshops, because the expectation is that the line will be worked by the owners of the Oudh and Rohilkhand Railway. Mr. Hunt's entry of ₹44 a mile was merely for a temporary store-house and yard at Hurdwar. Mr. Molesworth enters ₹1,800 a mile as the equivalent for a share of the workshops of the parent line. But the Association adopted the alternative he mentions of allowing interest on an equivalent amount of capital in their estimate of working expenses.

#### *Working Expenses.*

16. Mr. Molesworth states that every condition of the project affecting working expenses has been entirely altered. He originally, in his Note of 31st May 1866, set aside Major Gracey's estimate of working expenses—66 per cent. of the gross earnings—as being based on an unsound and misleading method, and adopted as the proper basis the method of calculating the train-mileage required for the traffic; but, as the Association contend they have amply proved, he took a much too large a number of train-miles, and the rate per train-mile at an impossibly and unfairly high rate. Major Gracey took his 66 per cent. on a gross revenue calculated at much higher rates and fares than are charged on the Oudh and Rohilkhand Railway, and this rate was actually over 151½ per cent. of the

gross earnings calculated at Oudh and Rohilkhand rates and fares; or, in other words, he made out that the Dehra Dun Railway would be worked at a loss of Rs66,009. Mr. Molesworth, by his method, arrived at a cost of working which was actually 89·57 of the gross earning at Dehra Dun Railway rates and fares. Major Gracey's total working cost was Rs1,93,790. Mr. Molesworth's total was Rs2,91,130, or almost a lakh of rupees more, which left a balance of only Rs33,867 out of Rs3,25,000, to which amount Major Gracey had raised the gross revenue estimate. It seems extraordinary that Mr. Molesworth should have thought this possible. Major Gracey's gross revenue of Rs3,25,000 recalculated at Oudh and Rohilkhand rates and fares amounts to only Rs1,41,509. Mr. Molesworth said that it would cost Rs2,91,130 to carry a traffic worth Rs1,41,509. This rate is 209 per cent.

17. Let us see, then, what Mr. Molesworth has made of the estimate of working expenses, now that "every condition affecting them has been altered, and the project placed in an entirely new and in a far more favourable light." In his second Note of 15th August 1886, he had affirmed his previous conclusions as to the amount of train-mileage necessary, but had said that the conditions of working having been altogether changed by the alterations in gradient, &c., it would be more satisfactory to take up the question afresh after the line had been examined as proposed by a competent Engineer, and when more full data were available. In the interval Messrs. Campbell and Hope's reply to this note has been forwarded to the Government of India and, it may surely be presumed, passed on to Mr. Molesworth; but there is no trace in his Note of 15th June, that he has even seen it. He repeats the assertion made at the outset that the ruling gradient of the line is no longer 1 in 40, and says that therefore the working expenses will be far less than they would otherwise have been. Mr. Molesworth again adopts Major Gracey's maximum estimate of traffic, Rs3,25,000, and says—"the working expenses of such a traffic" (the italics here and afterwards are not his) "on this line, as now modified, would *probably* be in round numbers about Rs2,00,000, leaving a net profit of Rs1,25,000, or about 4½ per cent. on a capital of 28½ lakhs of rupees."

18. Here then is the result of Mr. Molesworth's taking up the question of working expenses afresh, after the line has been examined by a competent Engineer, and when more full data are available. "Probably about Rs2,00,000," not a word about train-mileage now, although the Association's representative had followed him in using that method of estimating. The method of train-mileage has been abandoned for Major Gracey's method of guessing at percentages which the Consulting Engineer, in May 1866, pronounced to be unsound and misleading, and the percentage of profit has gone up at a bound from 0·9 to 4·33. Mr. Molesworth does not see, or has again ignored the fact that "such a traffic," namely, the gross earning of Rs3,25,000, is only brought out by estimating at high rates and fares; and reasoning from the analogy of other railways in India, he thinks that somewhere about 60 per cent. of the gross earnings (the Oudh and Rohilkhand rate is 56 per cent.) would be near the mark for the improved Dehra Dun Railway. Sixty per cent. on Rs3,25,000 would be Rs1,95,000, and Mr. Molesworth, dealing only in round numbers, puts the cost of working at about two lakhs. Major Gracey's traffic of Rs3,25,000 recalculated at Oudh and Rohilkhand rates and fares, would, as already stated, be reduced to Rs1,41,509. Mr. Molesworth says it would cost Rs2,00,000 to carry this traffic, and he has, therefore, unconsciously estimated the working expenses of the proposed line at 141 per cent., which would be an annual loss of Rs58,491.

19. As the difference is so trifling, while the margin of net revenue when fairly calculated is so great, the Association are quite prepared to accept Mr. Molesworth's estimate of cost of construction, in lieu of their own or of Mr. Hunt's, as the basis of a revised estimate of profit from carrying out the project. But they adhere to their own estimate of working expenses as being a reasonable one, and the best they are able to make. Their final estimate, then, is—

	R
Gross revenue (Major Gracey's)	3,25,000
Deduct working expenses, as per estimate No. 3 of Association's Reply, dated April 1887	1,12,343
Net revenue	2,12,657

which would yield a return of nearly 7·4 per cent. on the capital of 28½ lakhs.

20. In his original calculation of the working expenses of the Dehra Dun Railway, Mr. Molesworth took as his basis the cost of working a train mile on the Oudh and Rohilkhand Railway for the latter half of the year 1884; but the Association protested against this, as it was a period during which the work of improving the permanent-way was being carried on at a greater rate than previously, and they proposed to take the whole of the year 1883 as the basis on which to calculate. In his second Note, in reply, Mr. Molesworth said that 1883 was a year in which the Oudh and Rohilkhand Railway had been inefficiently maintained, and he said he had made allowance for the extra expenditure incurred by order of Government in 1884; but he gave no details of his calculations by which, on the whole, he had raised the total rate from R2·71 per train-mile on the Oudh and Rohilkhand Railway to R3·82 on the Dehra Dun Railway. In their replies to Mr. Molesworth's Notes, the Association gave reasons which seemed to them sufficient for preferring to take the Oudh and Rohilkhand Railway rate of 1883; and they showed that this would be ample for the whole of the improved Dehra Dun line worked at a low speed. In his 3rd Note, as already mentioned, Mr. Molesworth has entirely abandoned the method of estimating from the basis of the cost of working a train-mile, and makes a lump-sum guess at the total amount. It is now observed that the cost of working a train-mile on the Oudh and Rohilkhand Railway for 1886 had fallen to R1·76. The rate originally taken by Mr. Molesworth, namely, that for the latter half of 1884, was R2·71, and he put the Dehra Dun Railway rate at R3·82. In that proportion the estimated rate might now be reduced to R2·48, thus:—2·71:3·82::176:2·48,—or 39·68 annas. Revising on this basis, the calculation made in paragraph 31 of the Association's reply, dated April 1887, to Mr. Molesworth's second Note, we have 49,465 train-miles × 39·68 annas = R1,22,673; and the estimate of profit given above would become—

	R
Gross earnings (Major Gracey's estimate)	3,25,000
Deduct working expenses	1,22,673
Net revenue	2,02,327

which would yield still a return of over 7 per cent. on 28½ lakhs.

21. It has been said above that the margin of net revenue is a wide one. Supposing the difference between Mr. Molesworth's guess at, and the Association's estimate of, working expenses (paragraph 19) to be split, and R43,828 to be added to the latter, making a total of R1,56,171, the net revenue would be reduced to R1,68,828; but the profit would still be 5·87 per cent. This rate of working would be nearly 51·9 per cent. of a revenue swollen by charging



high rates and fares. It is 119 per cent. of the gross revenue calculated at Oudh and Rohilkhand rates and fares, and is therefore quite absurd. Rs. 1,12,343, the true cost of working a traffic of Rs. 3,25,000 earned from high rates and fares, is only 34 per cent., but it would be 79 per cent. if only Oudh and Rohilkhand rates and fares were charged, and a net revenue of only Rs. 29,166 would remain, yielding a profit of little over 1 per cent. This shows how necessary it is, in the case of such railways as those proposed for the accommodation of Mussoorie and Simla, to charge at first at least, and until the traffic develops, considerably higher rates and fares than those which prevail on main lines in the plains.

22. As the Amritsar-Pathankot runs to the foot of the Himalayas, and carries the traffic of two hill stations, and as it is worked by another Railway—the North-Western,—and also as the amount of traffic it carries is about the same as that expected to be carried on the Dehra Dun Railway, these two lines may be fairly compared as regards the cost of working, even though the gradients on the Amritsar-Pathankot Railway are light,—the ruling gradient being only 1 in 200, and that for only about  $4\frac{1}{2}$  miles. The statistics for 1885 are the latest available, because since then the ownership of the line has been merged in that of the North-Western Railway.

23. The length of the Amritsar-Pathankot Railway is 66·5 miles and that of the Dehra Dun 33·88, or about one-half. The passenger and goods traffics carried, and expected to be carried, over the whole length of the two lines compare as follows :—

	AMRITSAR-PATHANKOT RAILWAY.		DEHRA DUN RAILWAY.	
		Per train.		Per train.
1st Class Passengers . . . . .	1,334	81	10,000	6·16
2nd „ „ . . . . .	2,271	155		
3rd „ „ . . . . .	1,002	68		
4th „ „ . . . . .	1,84,177	126·13	2,00,000	137·16
TOTAL . . . . .	...	126·27	.....	143·32
Goods, tons . . . . .	.....	21·50	.....	25·00

The average loads per train for four trains a day on the two railways can be found by the following calculation :—

	LOADS ON MAIN AND BRANCH LINES.			
	North-Western Railway.	Amritsar-Pathankot Railway.	Oudh and Rohilkhand Railway.	Dehra Dun Railway.
Passenger units, per train .	228·73	129·27	272·36	143·16
Goods, tons, „ .	125·80	21·50	118·44	25·00

  

	PROPORTIONS OF LOADS ON BRANCH TO THOSE ON MAIN LINES.			
	Amritsar-Pathankot.	North-Western.	Dehra Dun.	Oudh and Rohilkhand.
Passengers . . . . .	129·27	÷ 228·73 =	143·16	÷ 272·36 =
Goods . . . . .	21·5	÷ 125·80 =	25·00	÷ 118·44 =

Average Amritsar-Pathankot Ry. train load 73. Average Dehra Dun Ry. train load 71.

The proportion of load per branch line train to load per main line train is therefore less in the case of the proposed Dehra Dun Railway than it was in 1885 on the Amritsar-Pathankot Railway; but the proportion varies every half-year, and on the latter line it has sometimes been 25\* per cent. greater. The above calculation shows, however, that, as contended for in paragraph 9 of the Association, to the Consulting Engineer's second Note of 10th August 1886, a single engine of the Oudh and Rohilkhand line will be fully up to the work of hauling the trains up the steepest gradients of the proposed Dehra Dun Railway, though at a speed less than that observed on the main line.

24. On the Amritsar-Pathankot Railway the number of train-miles run in 1885 was 102,741, which is equal to 4·23 trains a day. Four trains a day is the usual number, but occasionally extra trains are run. The working expenses amounted to R2,24,014, which sum divided by the train-miles gives R2·18 *per train-mile*, and this includes everything the North-Western Railway charged for management, joint use of station, &c., &c. During 1885, the cost of working per train-mile on the main line, North-Western Railway (Sind, Punjab and Delhi Section), was first half-year—R2·29, second-half—R2·44,—average for the year—R2·365. These figures show that the branch is worked cheaper than the main line. Fuel is much dearer in the Punjab than it is on the Oudh and Rohilkhand Railway, or will be on the Dehra Dun line: in 1885, it cost on the North-Western Railway (Sind, Punjab and Delhi Section) 4·635 annas, and on the Oudh and Rohilkhand Railway 3·86 annas a train-mile,—the trains on the latter line being, moreover, the heavier. The locomotive expenses per train-mile, in 1885, were, on the Sind, Punjab and Delhi Section, 12·24 annas, and on the Oudh and Rohilkhand Railway 9·62 annas per train-mile.

25. The gross earnings on the Amritsar-Pathankot Railway in 1885 were R2,89,876, and the working expenses—R2,24,014,—were 77·27 of that amount,—leaving a net revenue of only R65,862, which yielded scarcely 1·19 per cent. on the capital charged against the line, namely, R55,50,367.\* The net revenue required to pay 5 per cent. on such a capital would be R2,77,518; there was therefore a deficiency below a 5 per cent. on dividend of R2,11,656. Adding this to the actual gross earnings, we get as the gross revenue required to pay 5 per cent. on the 55½ lakhs, R5,01,532.  $R5,01,232 \div 2,89,876 = 1.73$ ; which shows that the rates and fares charged on the Amritsar-Pathankot Railway ought to be increased by 75 per cent. in order to yield 5 per cent. interest on the capital. Whether the capital charged is a fair amount we have no means of knowing, but it is believed that the line might have been made much more cheaply, than it was. The increased fares and rates required are shewn in the second column of the following table, which shows also the average rates and fares earned during 1885, and those proposed to be charged on the Dehra Dun Railway, and on which the revenue estimate for that line has been based.

	AMRITSAR-PATHANKOT RAILWAY.		DEHRA DUN RAILWAY.
	Fares and Rates earned in 1885.	Fares and Rates required to pay 5 per cent.	Fares and Rates proposed.
	Pies.	Pies.	Pies.
<i>Passengers</i> , 1st class, per mile . .	12	21·00	30
" 2nd " " " . .	8	14·00	.....
" 3rd " " " . .	4	7·00	.....
" 4th " " " . .	{ 2·5 } { 2·25 }	4·20	3
<i>Goods</i> , General Merchandise, per ton mile	7·7	13·47	28·03
" Military Stores, " "	13·38	23·34	42·20
" Minerals, " "	6·00	10·50	19·80

\* It should be remembered that the line is a new one, and that the traffic cannot yet be fully developed.

The fares and rates proposed above, to be charged on the Amritsar-Pathankot Railway, are, in all cases, except for 3rd class passengers, lower than those proposed for the Dehra Dun Railway; but even so moderately increased a tariff could perhaps not be enforced on the Punjab line, as the length of the ordinary road is about the same. But the road from Saharanpur to Dehra and Rajpur, through the Mohand pass, is so steep for part of its length, and so difficult to maintain throughout, and carriage by it is so expensive, that the fares and rates entered in the 3rd column of the above table may safely be charged. Also, if the Oudh and Rohilkhand route be used, there will be saving of 31 miles in distance between Rajpur and Lakhsar junction *viâ* Hurdwar, as compared with the length of the detour *viâ* the Mohand pass and Saharanpur.

*Future Procedure recommended.*

26. The rate of the profit on the proposed undertaking worked out by the Consulting Engineer being only 4.33 per cent. on the required capital, and even this estimate not being endorsed by the Government of India, it would seem useless to attempt to raise money for the construction of the railway without a guarantee from Government, and there seems no hope of this being given. Every possible effort should therefore be directed to establishing the contention of the Association as to the amount at which the working expenses should be estimated, and the first step to be taken seems, therefore, to be to ask the Government of India to refer the project, as prepared by the Association and revised by Messrs. Hunt and Molesworth, together with all the various Notes, including the present, on the subject of working expenses, to the Secretary of State, with a request that he will be pleased to take the opinion of Sir A. M. Rendel, M. I. C. E., the Consulting Engineer to the Secretary of State, on the whole question. Failing the consent of the Government of India or of the Secretary of State to this course, it will be open to the Association to refer the matter to some Consulting Engineer in London, whose opinion will have weight enough to settle the disputed point.

A. CAMPBELL.  
C. W. HOPE.

*9th September 1887.*

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Dated 10th January 1885.

From—C. W. HOPE, Esq., Secy. and Agent, Dehra Dun Railway Association,  
To—The Secretary to the Government of India, Public Works Department.

Referring to your letter No. 963 R.C., dated the 30th October 1884, I am directed to state, for the information of the Government of India, that the completion of the project for the proposed Dehra Dun Railway has been delayed owing to the necessity which appeared of more thoroughly examining the country between Dehra and Rajpur with a view to selecting the best possible line between those places. The ground is there very rough, and several additional trial lines and much cross-sectioning have been found necessary. Other circumstances also are delaying the completion of the estimates, and it seems possible that the approval by the Local Government of the project may not be obtained in time to admit of the decision of the Government of India as to the value of the project being given within the year during which the concession extends, and which will expire on the 9th March next. The Local Government, moreover, have said that it may be necessary to depute an officer to go over the line after the project is submitted, and this may cause additional delay.

2. The latest information the Association have received from London is, that matters are looking worse instead of better for the prospects of proposed unguaranteed Railway schemes, but the Association do not on that account intend to abandon their efforts to arrange for the construction of the Dehra Dun Railway, and they have unanimously resolved to complete the project, and then wait and watch for that change, in either the feeling of the money market or the policy of Government, which they are convinced must ere long happen. I am therefore directed to request that the Government of India may be pleased to grant to the Association an extension of the period of the concession for three years, from the 10th March 1885, on the terms stated in your letter No. 489 R.C., dated the 14th June last.

3. The foregoing request is made in the belief that the Government of India will find that the survey which has been made is of sufficient value to warrant them in deciding to pay for the cost of it, and the Association would of course be glad to be then reimbursed for their outlay. But should the Government of India be of opinion that to pay at once the cost of the survey would be incompatible with granting an extension of the concession which would be comparatively valueless if the plans did not remain in the custody of the Association, then the Association would request that the amount may be placed at their credit until the extended period of the concession shall expire, or until they shall succeed in forming a Company to make the railway, and that it may be allowed to bear interest at the rate of 5 per cent. per annum while in deposit.

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### 3.—Bengal-Assam Railway.

No. 166 (Railway), dated 9th September 1887.

From—The Government of India,

To—The Secretary of State for India.

With reference to our Despatch No. 159 Railway, dated 27th October 1884, we have the honour to forward, for information, copies of a Resolution relating to the projected Bengal-Assam Railway, which we have issued in continuation of the Resolution No. 949 R.C., dated 22nd October 1884, which accompanied that Despatch.

2. It will be observed that, in accordance with previous decisions, we have stated in paragraph 12 of the Resolution that the project must continue classed in Schedule B, and cannot receive aid from the State beyond such as is comprised in a concession on what are known as "Bengal and North-Western Railway" terms.

Extract from the Proceedings of the Government of India, Public Works Department,—No. 868 R. C., dated 25th August 1887.

Read—

Resolution of the Government of India, Public Works Department, No. 59 R. C., dated 24th January 1884, with enclosures.

Resolution of the Government of India, Public Works Department, No. 433 R. C., dated 30th May 1884.

Resolution of the Government of India, Public Works Department, No. 949 R. C., dated 22nd October 1884.

**RESOLUTION.**—In the first of the Resolutions quoted above it was briefly explained that, in consequence of the unsatisfactory results of the investigation in 1881-82 of the project for continuing the Dacca-Mymensing Railway to the valley of the Brahmaputra near Gauhati, it had been determined, at the suggestion of the Chief Commissioner of Assam (Sir Charles Elliott) to look for a route into Upper Assam through the North Cachar Hills, which might be combined with a line from Cachar to Chittagong, comprising a branch to the Megna for access to Calcutta. The results of surveys and reconnaissances consequently undertaken in the cold season of 1882-83 by the Engineer-in-Chief, Mr. J. W. Buyers, were stated to be that "a practicable route can be found across the North Cachar Hills into Assam; and there appears little reason to doubt that a railway following this route, and serving, as it would, the important districts of Sylhet and Cachar, has enormous advantages over a railway simply running down the valley of the Brahmaputra, parallel throughout its length to a navigable river, and commanding only a narrow tract of country." The estimated cost of the project was found to be moderate, the gradients through the hills easy, and the financial prospects, on the whole, favourable, but it was pointed out that no reliable judgment could be formed upon these points until detailed surveys and estimates had been prepared, and the prospects of traffic more closely examined.

2. The second Resolution quoted above made public a report by Mr. Molesworth, the Consulting Engineer to the Government of India for State Railways, on his examination of the projected line through the North Cachar Hills, and of the branch from Lumding, at their northern outlet, to Gauhati on the Brahmaputra. His opinion entirely confirmed the previous reports as to the route obtainable through the hills, which he described as a good "locomotive line, with gradients of about 1 in 70." On the general question, he remarked that—

It is difficult to overrate the importance of this line to Assam in a strategical,

political, administrative point of view. The whole line between Silchar and Golaghat is, however, virgin forest, and the population practically *nil*. But there are rich tracts of land suitable for tea along the line of railway, which would be eagerly taken up if a railway were constructed, especially in the Dimapur Valley, and such a line would undoubtedly revolutionise Upper Assam. As a direct route to Calcutta, such a line would possess many advantages compared with the route *via* Dhubri. \* \*

The third Resolution contained the report on surveys in 1883-84, with the views of the Chief Commissioner (Sir Charles Elliott), in paragraph 9 of which he expressed concurrence with the Engineer-in-Chief (Mr. Buyers) in preferring the Dimapur Valley route to one parallel to the Brahmaputra River.

3. In consequence of the favourable prospects thus continuously held out, and also owing to the impossibility of connecting Mymensing with Sylhet and Cachar by a direct line, the surveys and other investigations for the line connecting Cachar and Chittagong, with branch to the Megna, have been prosecuted without interruption up to their completion in March last, and the Government of India are now in a position to state, for general information, the final aspects of the project, and to append to this Resolution several interesting and valuable documents in illustration of it.

4. *Chittagong to Comilla*, 96½ miles, with branch from Laksham to Chandpur, 32 miles.—Daoodkhandi was originally designated as the terminus of this Branch, but Chandpur was found to be a better port, and also within six hours easy steaming of the terminus of the Eastern Bengal Railway. Naraingunj is within four hours of it. No further operations on this section have taken place since the project was submitted by the Bengal Government in 1883, and published with the Resolution No. 59 R.C. of 24th January 1884. In March last that Government were requested to state whether they still held the opinions as to the traffic and remunerativeness expressed in 1883. Their reply (enclosure No. 14) is to the effect that the estimate of cost will probably be found susceptible of reduction, from various causes, but that little reliance can be placed on estimates of traffic, and therefore Sir R. Thompson is disposed to give a less confident answer as to the particular rate of interest which may be expected. At the same time, His Honour "maintains unchanged the opinion that this railway is second to none in Bengal in importance, and that there is every prospect of its proving to be very remunerative." In support of this view is adduced the extraordinary development of the trade of the port of Chittagong, from ₹40,68,429 in 1876-77 to ₹2,30,87,811 in 1885-86, with even higher years in the interim, notwithstanding deficient means of communication with both the interior and the sea.

5. *Comilla to Badarpur*, 157 miles.—Badarpur is 18 miles from Silchar, but has been selected, after prolonged investigations, as the best point for the main line to cross the Surma River and enter the North Cachar Hills. The town of Silchar, consequently, cannot be reached by railway except by means of a branch which, in consequence of the number of large streams to be crossed, will cost the high figure of ₹1,05,603 per mile. The necessity for constructing this branch, at least at the outset, will be a matter for consideration whenever the main project comes to be actually taken in hand. At the same time, and possibly in precedence of it, will come forward the two short branches, to the Megna near Bhairab Bazar, and to Fenchuganj, which are noticed in Mr. Buyers' Final report (enclosure No. 7).

Regarding the alignment of this section, Mr. Buyers explains that it has been a good deal determined by the necessity of avoiding formidable streams and inundated ground on the one hand, and the Tipperah and Lushai Hills, on the other.

6. *Badarpur to Lumding*, 115½ miles.—The alignment of this section, lying entirely in the North Cachar Hills, between the Cachar District and the Dhan-siri Valley of Upper Assam, has been worked out with remarkable perseverance, in the face of extraordinary difficulties. The results have proved highly satisfactory, for it has been established that a line, with a ruling gradient of 1 in 70, is obtainable at a cost which, whether we adopted Mr. Buyers' estimate of 1½ lakhs or Mr. Molesworth's precautionary increase to 1¾ lakhs, cannot be deemed otherwise than moderate. If, however, a gradient of 1 in 40 be accepted in two places, for an aggregate of 6½ miles, a reduction of 28½ lakhs in the entire cost of the section may be secured.

7. *Lumding to Kumarband Ali*, 96½ miles.—This section runs through the Dhansiri or Dimapur Valley, a locality now mostly uninhabited and covered with forest, but believed to have been peopled and cultivated, until devastated by invaders from Upper Burma. Two alignments have been examined. One, keeping to the west of the Dhansiri, passes conveniently the town of Golaghat, but is open to certain engineering objections relating to water-way; the other, crossing the Dhansiri and Daiang rivers over higher ground, unites with the former alignment about 6 miles beyond that town. Mr. Buyers would prefer the latter, but the question is one for further enquiry into the circumstances of the local trade and final decision by the Chief Commissioner.

8. *Kumarband Ali to Makum Junction*, 116½ miles.—This section involves an important alteration in the project. The original intention was that the railway should run from Golaghat to Dibrugarh, and the Resolution No. 59 R. C. of 24th January 1884 proceeds upon that basis. Later investigations, however, established the fact that an alignment keeping closer to the hills, through Jaipur, to Makum Junction, would serve better all local interests, and at the same time avoid crossing several large rivers, and much inundated ground. So expensive would the latter difficulties have proved that the new alignment is found to cost only 6½ lakhs more, through 25 miles longer.

9. *Lumding to Gauhati*, 110½ miles.—This branch has from the first been contemplated, with the object, not merely of opening up the valley of the Kopili and Kalong rivers and affording facilities to such cultivation as they now contain, but of providing cross communication between the Dhansiri or Dimapur Valley and the Brahmaputra, and ready access to the former for the coolies who pass between Behar and Assam.

10. *Total lengths and cost*.—Particulars of these will be found in the abstract estimates appended to Mr. Buyers' general report (enclosure No. 8), but after applying the necessary corrections for the amendments of last season, and Mr. Molesworth's precautionary enhancement of the mileage rate in the North Cachar Hills, the figures may be stated as under:—

	Miles.	Rate per mile.	Cost.
		Rs	Rs Lakhs.
Chittagong to Badarpur . . . . .	253½	80,522	20½
Lakeham-Chandpur Branch . . . . .	32	81,072	27
Badarpur to Lumding . . . . .	115½	1,75,000	202
Lumding to Makum . . . . .	213½	67,505	144
Gauhati Branch . . . . .	110½	76,005	84
Total (ruling grade 1 in 70) . . . . .	724	...	661
Deduction if exceptional gradients of 1 in 40 be introduced . . . . .	...	...	28½
Total with exceptional gradient of 1 in 40 . . . . .	...	...	632½
Sichar Branch when required . . . . .	18	1,05,803	19
	742	...	651½

These results contrast very favourably with those put forward preliminarily in the Resolution No. 59 of January 24th, 1884, considering that, although the main line goes 25 miles farther east, the final excess is only about 6 miles in length and 5 lakhs in cost. The estimates have been examined by Mr. Molesworth, the Consulting Engineer to the Government of India, whose notes are appended. It must, however, be distinctly understood that they are subject to the farther detailed scrutiny which would precede actual operations, and to revision in accordance with the prices of iron and steel, and the rates of exchange, which might prevail when outlay commenced. The Government of India can undertake no responsibility in respect of them.

*Traffic and remunerativeness.*—The calculations of net returns put forward in the Resolution No. 59 are specified in the margin and comprised allowance

	Per cent.	
Chittagong to Commilla	and	for cheap working by the use of Makum
Chandpur	8 5	coals. The further discussions which
Commilla to Badarpur	7 85	will be found in the reports do not
Badarpur to Dibrugarh	and	seem to have thrown much new light
Gauhati	2 74	upon the question, owing to the absence
Mean on whole undertaking	5 38	

of trade statistics for the populated tracts and the impossibility of estimating the effect of railway facilities upon the course of existing trade and the capacity of the country for development. The Government of India concurs with His Honour the Lieutenant-Governor of Bengal in receiving all such estimates with caution, and must leave private enterprise to form its own judgment of the undertaking upon such data as it may deem to be reliable.

12. Fully as the Government of India recognise the importance of opening up by railway the tracts of Eastern Bengal and Assam now in question, they

*Vide* Report of the Parliamentary Committee of 1884 on East Indian Railway communications, page 530.

are not in a financial position which would justify the offer of a guarantee for a purely commercial railway, and

must therefore adhere to the decision of January 1883, by which the project was classed in "Schedule B," and can receive no aid from the State beyond such as is comprised in a concession under what are known as "Bengal and North-Western Railway terms." The Government of India also consider that the entire project should be taken up by one Company or Administration.

13. *General Remarks.*—The grounds upon which the route which passes from Sylhet and Cachar through the North Cachar Hills was originally selected for the opening out of Upper Assam, in preference to one simply running down the Brahmaputra Valley, have been briefly stated in the opening paragraphs of this Resolution, and will be found at greater length in the documents appended to the previous Resolutions quoted in the heading. Subsequent examination (see Resolution No. 949 R. C., dated 22nd October 1884) has demonstrated the unsuitability for a railway of the country lying along the Brahmaputra to the north of the Meikur Hills, between Joklabundha and the mouth of the Dhansiri. The question is thus narrowed to that of whether it would be desirable to forego the connection of Sylhet and Cachar with Upper Assam through the North Cachar Hills, *i.e.*, the Badarpur-Lumding Section of the present project, and to substitute for it an extension of the Lumding-Gauhati Branch from the latter place to Fakirgunj opposite Dhubri. The length and cost of the former are 118 miles and about 164 lakhs; those of the latter, 112 miles and about 109 lakhs. The Officiating Chief Commissioner of Assam, Mr. W. E. Ward, who is understood to advocate the Fakirgunj alternative, has stated his views fully in enclosure No. 4 to this Resolution. Whether tea can be conveyed to Calcutta a few annas cheaper by the Fakirgunj



or the Chandpur route and how far steamers will be utilised in the former, are questions which depend upon competition and various other circumstances which it is difficult to appraise. The Government of India, however, cannot consider the matter upon the comparatively narrow basis of the cost of export of a single not very bulky, though highly important, article; they must look at the immigration, planting and commercial interests as a whole. From this point of view, they cannot but hold that it is better to confer the benefits of railway communication upon fertile, but now completely landlocked tracts, than upon such as are at present tolerably well served by steamer transport; that it is more prudent to allot rail and steamer to different portions of a developing province than to bestow both on one alone; and that it is in the best interests of Upper Assam to place it in direct communication with the seaport nearest to it, namely, Chittagong.

14. In conclusion, the Government of India have much pleasure in recognising the care, ability, and perseverance exhibited, for some five years, in the preparation of this project by Mr. Buyers and his staff, among whom Messrs. H. W. Clift, E. J. Moore, and W. H. P. Sherman may be specially mentioned as distinguished. Messrs. A. R. Lilley and H. T. Gwyther, Executive Engineers, and Sub-Engineer B. A. Maine are also deserving of praise. Messrs. C. J. S. Baker, R. L. Campbell and R. T. Denne, Assistant Engineers, did good service.

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No. 100 (Railway), dated 30th August 1888.

From—The Secretary of State for India,

To—The Government of India.

Herewith is transmitted, for the information of Your Excellency's Government, copies of two sets of proposals\*

\* Letter from Bengal Central Railway Company, of 19th July 1888.

Ditto from Sir T. C. Hope, K.C.S.I., C.I.E., and others, dated 26th July 1888.

which have been recently submitted to me for the construction of railways in Eastern Bengal.

2. I have caused the promoters to be informed that their proposals have, in the first instance, been forwarded to Your Excellency's Government for consideration, and I shall be glad to be placed in possession of your views on the schemes in question.

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#### Enclosure No. 1.

Dated 19th July 1888.

From—C. H. DICKENS, Esq., Chairman, Bengal Central Railway Company, Limited,

To—The Under-Secretary of State for India.

In Mr. Godley's letter, P. W., 2302, of 30th November last, on the subject of the proposed metre-gauge system of railways, treated of in the Government of India's Resolution of 25th August last, connecting Bengal with Chittagong, Cachar, and Assam, it is said that Viscount Cross, though unable to accept the proposal made by this Company, will always be ready to consider favourably any proposals which it may be possible to submit to him for the construction of any railway in Eastern Bengal involving no direct financial aid from the State.

2. The Board of this Company have since further considered the matter, and think it possible that the required capital may be raised on Bengal and North-Western terms (excluding the effect of the retention of the Government

share of surplus over 6 per cent. on the purchase clause) by a new Company acting in concert with this Company, if the Right Honourable the Secretary of State will agree to the following provisions to accompany such terms.

3. From the expressions in Mr. Godley's letter, the Board gather that the Secretary of State for India in Council does not limit his wish for the construction of railways in Eastern Bengal to the system precisely as included in the Government of India's Resolution, and might be willing to exclude the part of that system extending from Cachar to Assam. The proposal would thus include the following lines, as entered in the table at paragraph 10 of the Government of India's Resolution, No. 116 of 25th August 1887 :—

Name of Lines.	Miles.	Rate per Mile.	Cost.	
		R	R	
Chittagong to Badarpore . . .	253½	80,522	20½ lacs.	
Lacksham-Chandpore branch . .	32	84,073	27 "	
Silchar branch . . .	18	1,05,603	19 "	
Total .	303½		250 lacs.	

or, say, 1,700,000%. To provide for contingencies it will be as well to contemplate the raising of 2,000,000%. ; half might be debentures and half share capital.

4. To enable the proposed new Company to raise this capital, it seems to the Board that it will be necessary to obtain an arrangement for the working of the whole system of Bengal Railways now worked by the Eastern Bengal State Railway staff, pooling their earnings and working expenses with those of the new lines when the latter are opened throughout for traffic. The effect of this will be that the new Company will secure a share of an existing income in the early part of its career when its traffic may be undeveloped, while the Government, besides securing for the country the construction of 304 miles of useful railway, will, as proprietors of the existing State Railways, and guarantors of the Bengal Central Railway, obtain a share of future profits of the new lines as well as the advantage of the traffic they will bring over the old ones. The pooling is necessary, also, to secure fair working of portions of the lines which have conflicting interests.

5. The details might be as follows :—The new Company to have the working of the Eastern Bengal (732 miles) and Bengal Central systems (125 miles, or possibly, with extension to Madarupore, 190 miles) with the new railway as one concern, pooling receipts and expenses, and applying net earnings as follows :—

*First.*—To payment of interest on the debenture issue of each concern.

*Second.*—To paying half yearly to the new Company interest on its share capital at 4 per cent. per annum, to take effect after the cessation of payment of interest out of capital during construction.

*Third.*—To paying half yearly to the Bengal Central Company interest on its share capital, at 2 per cent. per annum (of which three-fourths would revert to Government under the contract), so as to make up to its shareholders (with the 3½ per cent. guaranteed to them) interest at the rate of 4 per cent. per annum.

*Fourth.*—To paying half yearly to the Government on its capital outlay,

not represented by debentures, interest at 4 per cent. per annum.

*Fifth.*—Any surplus to be divided between the Government and the two Companies in proportion to the capital subscribed by each (exclusive of debentures), so as to give the shareholders the same dividend on their capital as accrues to the Government in respect to the capital (exclusive of debentures) of the Eastern Bengal system.

*Sixth.*—The division of the net earnings to be in rupees in India.

6. The agency of a separate Company is only necessary for the purpose of securing the condition of paying interest out of capital during the construction of the new lines. If this provision be omitted, the Bengal Central Company could carry out the whole arrangement, working partly with guaranteed and partly with unguaranteed capital.

7. I beg to be informed if the Right Honourable the Secretary of State for India is willing to enter into negotiations on this basis, or any modification thereof.

8. The Board would refer to the 65 miles of railway, being the proposed extension of the Bengal Central Railway to Madarupore now under consideration of the Bengal Government, and which, it is hoped, may shortly be sanctioned. From Madarupore there will be river steamer communication (about 40 miles) with Chandpore. The length of navigation may be reduced if further investigations show that the railway can be conveniently extended from Madarupore across the Urial Khan river towards Chandpore.

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### Enclosure No. 2.

Dated 26th July 1888.

From—H. HOPE, Esq.,

To—The Under-Secretary of State for India.

We have had under our careful consideration the project for the Bengal-Assam Railway, described in the Resolution of the Government of India, No. 868 R. C., dated 25th August 1887, which appeared in a Supplement of the *Gazette of India*, dated 10th September 1887.

2. This project consists of a main line of railway on the metre-gauge, running from the port of Chittagong, through the North Cachar Hills, to the Makum Junction of the existing short railway in Upper Assam, together with branches from Laksham to Chandpur, in order to establish a connection with Calcutta, and from Lunding to Gauhati on the Brahmaputra River, so as to open up the traffic with Northern Bengal, Behar, and the North-Western Provinces. This main line would be 724 miles long, and is estimated to cost 632½ lacs of rupees. Branches from Badarpur to Silchar, with a view to possible extension to Manipur and Burma, and to Bhairab Bazaar and Fenchugunj, in order to tap the water traffic of Sylhet, are also suggested as probably desirable eventually.

3. We observe that the Government of India, in paragraph 12, while laying down that the entire project must be undertaken by one Company or Administration, declare their inability to give any pecuniary guarantee. The absence of this support, which has hitherto been accorded to all the trunk lines of India undertaken by private enterprise, undoubtedly renders the launching of this essentially trunk line project upon the money market a most difficult operation,

and we consider that success will be impossible unless the Government should be willing to grant, in lieu of the guarantee, substantial concessions of a different nature, which, while proving attractive to investors, would not involve any charge upon the finances of India.

4. Upon the extreme importance to commerce of opening up by railway the vast and ill-developed tracts of Upper Assam; upon the value, from a military point of view, of such a line as that proposed; upon the relief to the dense populations of Sylhet and Behar, which ready access to abundant fertile lands would afford, and upon the advantages, administrative and financial, which would ultimately accrue to the Government from the undertaking, we do not propose to enlarge. We believe that they are already fully recognized by the Assam Administration, the Government of India, and Her Majesty's Secretary of State, and we trust that they will be held to justify the concessions to which we have above alluded, and which we now proceed to describe.

5. The free grant of the land necessary for the construction of the line, and the permission to debit to capital the interest falling due until the completion of the undertaking, are the principal features of the "Bengal and North-Western Railway terms," which the Government of India, in the 12th paragraph of their Resolution already quoted, state their readiness to grant. The further concessions we ask are as follows.

6. *First*.—The grant to the Company, for subsequent sale, lease, or disposal in other manner, of Government waste land to the extent usual in the case of railway concessions in the Dominion of Canada, namely, ten square miles, or 6,400 acres per mile of railway. This land should be situated in the tract between Badarpur and Golaghat on the main line, and between Lumding and Roha on the Gauhati branch, and should comprise land adapted for "ordinary and special" cultivation as may be available. The whole should be revenue free for fifty years; after that term, revenue to be assessed, at the rate to which similar land in the district may be liable under the law for the time being in force there, upon all land which has been brought under cultivation, or has been otherwise rendered productive; but land (other than forest) which has not been so utilized, to be resumable at the discretion of the Chief Commissioner of Assam. Land for Government roads, and other public purposes, would be surrendered by the Company at the request of Government free of charge except compensation for outlay incurred by the Company or their assignees.

We would point out that the above terms are less favourable than those which have been granted to the Canadian Pacific Railway, inasmuch as that line has received the substantial mileage grant of 25 million dollars, in addition to 25 million acres of land on its 1,906 miles of line. Land only, at the rate

	Miles.	Acres.
* North-Western Coal and Navigation Co. . . . .	110	704,000
Manitoba and South-Western Colonization Railway Co. . . . .	153	988,800
Manitoba and North-Western Railway Co. . . . .	430	2,752,000
Qu'Appelle, Long Lake, and Saskatchewan Railway Co. . . . .	325	2,080,000
Wood Mountain and Qu'Appelle Railway Co. . . . .	240	1,536,000
North-West Central Railway Co. . . . .	450	2,880,000
Alberta and Athabaska Railway Co. . . . .	300	1,920,000
Winnipeg and Hudson's Bay Railway Co. . . . .	475	3,040,000

of 6,400 acres per mile, has also been granted to the railway undertakings specified in the margin.\* The Winnipeg and Hudson's Bay Railway has likewise received,

for an additional 425 miles of its length, a grant in the North-West Territory at double the mileage rate above mentioned, or 5,440,000 acres; its total grant is thus 8,480,000 acres for 900 miles of line.

7. *Second*.—The exclusive right during a period of ten years from the date

of the formation of the Company to acquire, by free grant from the Government, all mines and outcrops of coal which may at present be known to exist or be discovered in Government lands in the Khasia, Jaintia, and North Cachar Hills; and also the right of working any such collieries and disposing of their output, and of making, maintaining, and working such branch lines of railway as may be necessary to connect the same with the main line.

8. *Third.*—The exclusive right, within the same period, similarly to acquire petroleum or other mineral oil from all Government lands in which this right has not already been assigned or ceded to other parties, and which may be situated in Assam south of the Brahmaputra and east of Gauhati; to extract, manufacture, and sell all such oils, and similarly to provide branch railways where deemed necessary.

9. *Fourth.*—The right of getting timber for the construction, maintenance, and working of the railway from forest lands at the disposal of Government in districts adjacent to the railway; provided that forest reserves may be excluded by Government from this concession where deemed indispensable.

10. We consider that the amalgamation of the Assam Railways and Trading Company's Railway coal and oil operations with the Company we contemplate would be an advantage to both undertakings, and, provided it can be arranged on suitable terms, we trust that we may have the aid of the Secretary of State to that end in respect of the transfer of the concessions and the extension of their periods where necessary.

11. In the event of the foregoing proposals commending themselves to the approval of the Government, we are prepared to use our best endeavours to organize a reliable Company, under the Limited Liability Act, for the purpose of constructing the entire railway project, and carrying out the coal and petroleum operations above indicated.

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#### 4.—Kotri-Delhi Railway.

No. 32 (Railway), dated 29th March 1888.

From—The Secretary of State for India,

To—The Government of India.

With reference to paragraph 4 of my Railway Despatch No. 148, dated 15th December last, I now forward to Your Excellency copy of an application which has been made for the construction, with the aid of a guarantee from the Secretary of State in Council, of a direct line of railway from Karachi to Delhi and Kalka. A copy of my reply thereto is also enclosed.

Dated 3rd March 1888.

From—The Late Agent in India, E. I. R. Coy.,

To—The Under-Secretary of State for India.

We have the honour to request the favour of your laying before the Secretary of State this application for a concession for a line of railway, on the standard or 5 ft. 6 in. gauge, which we propose to call The Great Western of India Railway, having for its object to connect the Port of Karachi with the trade and business centres of Upper India by the shortest route.

2. The Port of Karachi is 200 miles nearer Suez than Bombay, and it has the additional advantage of being situated outside the ordinary range of cyclones. Being thus not only the nearest port in India to England, but exceptionally safe in its approaches, while capable of being easily protected against attack, its importance as a base for military operations on the north-western frontier and apart from commercial considerations is very great; and the Government of India in recognition of this has recently sanctioned the expenditure of a considerable sum of money for improving the harbour and providing facilities for loading and discharging ships' cargoes.

3. The commercial importance of Karachi became pronounced only eight or nine years ago, when the completion of The Indus Valley Railway placed it in communication with the grain-producing districts of the western portion of the Punjab province, the wheat exports alone having been as follows since 1879:—

In 1880	.	.	.	.	.	8,473	tons.
1881	.	.	.	.	.	92,616	"
1882	.	.	.	.	.	136,981	"
1883	.	.	.	.	.	218,807	"
1884	.	.	.	.	.	214,719	"
1885	.	.	.	.	.	325,981	"
1886	.	.	.	.	.	179,857	"

4. Karachi is at present connected only by a single line of railway with the Punjab, and that, moreover, a line liable to very serious injury from the floods of the Indus, especially in that part between Sukkur and Kotri, and this line serves only the north-western portion of the Punjab. The result being that, notwithstanding its geographical advantages, only a little over 4 per cent of the foreign trade of British India finds its way *via* the Port of Karachi, an unsatisfactory state of affairs, which shews no indication of improvement, and clearly points to the necessity for more direct communication with the interior.

5. The proposed line would place Delhi, now a great railway centre and practically the central city of Upper India, within about 725 miles of the Port

of Karachi, as compared with 888 miles, its distance from Bombay by the Rajpootana and Bombay, Baroda and Central India Railways, and 954 miles its distance from Calcutta, Karachi being thus the nearest port on the sea board for the traffic of Delhi and the surrounding districts.

6. The accompanying map shows in red the main line and branches of the proposed Great Western of India system. The main line extends from Kotri on the Indus to Rohtak, a length of about 580 miles; at Rohtak it bifurcates, one line being taken *via* Kurnal and Umballa to Kalka at the foot of the Simla hills, a length of about 150 miles, and another being taken to Delhi, a length of about 40 miles.

The proposed branches are—

1. One from the most convenient point on the main line near Hyderabad to Rohri on the North-Western system; this branch would secure communication between Karachi and the Sind-Pishin Railway at any time that the floods of the Indus may have interrupted traffic on the existing line between Sukkur and Kotri, or should any military emergency arise on the north-west frontier it would form with the North-Western a double line between Kotri and Rohri and give immense facilities for any pressure of military traffic.
2. One from Bickanir to Bahawalpur on the North-Western system below the Sutlej Bridge should the Government desire this connection made; this would form a portion of a line recently surveyed under the orders of the Government of India from Ajmere on the Rajpootana Railway through Bickanir to Bahawalpur.

7. We understand that a proposal for a metre-gauge connection from the Rajpootana system with Umballa and Kalka has recently been placed before the Secretary of State. It is, we believe, recognised that at the present price of permanent-way material the extension of the metre-gauge system is not warranted in the case of trunk lines of communication, and it seems clear that a metre-gauge line in this locality could not meet the requirements of the Government of India. We would therefore respectfully request that the Secretary of State will withhold his judgment on that proposal pending consideration of the scheme now submitted, which we believe will commend itself as far better calculated to serve the interests of the country in a commercial as well as in a military point of view.

The length of the proposed system is approximately as follows :—

	Miles.
Main line, Kotri to Delhi . . . . .	620
„ Rohtak to Umballa . . . . .	150
Branches.—To Rohri . . . . .	150
To Bahawalpur . . . . .	130
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Total	1,050
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Of this length, 410 miles of the main line and 150 miles of the branch line serve fertile districts, the remaining 360 miles of the main line and the Bickanir-Bahawalpur branch are in the Rajpootana desert, and though serving the important towns of Bickanir and Jeysulmere and a number of small places, are not expected to yield any large amount of local traffic for a considerable time.

8. We anticipate that the construction of this line will present but little engineering difficulty, and that the only work of real magnitude on the system

will be the bridge over the Indus at Kotri. The cost of this bridge, however, divided over the whole system, will not added largely to its mileage rate; and taking into consideration the present low price of Permanent Way Materials, we are confident that the total outlay for a standard gauge railway, suitably equipped with rolling stock, will not exceed Rs80,000 per mile, or a total of Rs4,40,00,000, for main line and branches the equivalent of, say, six millions sterling, at present rate of exchange.

9. As the proposed system will place Delhi fully 160 miles nearer the seaboard than it is at present, we anticipate a large through export traffic, as we shall be enabled to place wheat on board ship at Karachi at a saving of at least one shilling per quarter on present rates from Delhi and *via* Delhi. Our route would also be the shortest for mails and passengers between Europe and Simla, the headquarters of the Government of India for more than half the year, the distance from Karachi to Umballa being but a little over 800 miles by the proposed line, as compared with the distance from Bombay of 1,048 miles with two breaks of gauge and 576 miles of metre-gauge over which the speed cannot equal that of the standard gauge, or from Karachi by the present line, *via* Lahore, of 996 miles. The construction of this Railway would, therefore, probably commend Karachi as the most suitable port for H. M. Troopships for the bulk of the reliefs, and if weekly steamers to and from Aden were arranged, a very appreciable saving in the time of transit of the mails would be gained.

10. We have also high authority for stating that the construction of the proposed line and Rohri branch would at once lead to a large increase in the land revenue of Sind, sufficient of itself to pay interest on the outlay within the province of Sind.

11. The proposed line as described would run in a north-east direction from Hyderabad, and for about 140 miles the main line, as well as the entire branch to Rohri, 150 miles in length, would traverse fertile and productive districts of the province of Sind in the Delta of the Indus; thence for 360 miles the main line would run through the so-called desert of Rajpootana, which is desert only owing to the absence of irrigation, the soil being naturally fertile, and in years of good rainfall producing abundantly. The protection against famine afforded by railway traversing the centre of the district will stimulate enterprise in well-sinking and irrigation, and ultimately lead to the reclamation and settlement of the more fertile tracts; for the present, however, with the exception of a small traffic at the stations of Jeysulmere and Bickanir, this section of the proposed line, as well as the branch 130 miles from Bickanir to Bahwulpur, may be accepted as practically barren and devoid of traffic. The last 120 miles of the line to Delhi, and the extension from Rohtak, 150 miles northwards to Kalka, run through a productive and populous district of the Punjab irrigated by the Western Jumna Canal. Thus it may be expected that 270 miles of the proposed line in the Punjab, and 290 miles in Sind—or 560 miles altogether—would yield a fair average amount of traffic in passengers and goods.

12. The net earnings per mile per annum of the North-Western Railway on the West, and of the Rajpootana-Malwa Railway on the East, of the proposed railway, are about equal, and in the year 1886, when a failure of crops in the Punjab caused a collapse of the wheat trade,\* and during which year the traffic of the North-Western Railway was interrupted for three weeks owing to

\* In 1886 the decrease in the wheat carried by the North-Western Railway, and the Bombay, Baroda and Central India and Rajpootana-Malwa Railways, as compared with 1885, was no less than 583,797 tons.



damage by floods, the average net earnings of the two systems combined, 3,261 miles, many miles of which traverse districts as unproductive as the Rajpootana desert, were Rs. 6,333 per mile. Assuming that 560 miles only of the proposed line in the provinces of Sind and of the Punjab would yield net earnings at this average rate, and that the 490 miles in Rajpootana are an absolute blank as regards local traffic, the total net earnings of the proposed line would be Rs. 35,46,480, equal to  $4\frac{1}{4}$  per cent. on the capital outlay. This calculation is based upon net earnings, and therefore proceeds on the assumption that the working expenses of the proposed line would be at the same rate as those of the North-Western and Rajpootana-Malwa Railways. It is probable, however, that the expenses of the proposed line would always bear a lower ratio to gross earnings than on the North-Western Railway, which has to bear the heavy cost of curbing and controlling the Punjab rivers, or on the narrow-gauge Rajpootana Railway.

13. The working expenses of any railway may be separated into (a) the non-fluctuating charges, administration, supervision, station staff, &c., which are constant and do not vary with the traffic; these expenses for a line such as that proposed may be taken at Rs. 2,000 per mile per annum, or Rs. 21,00,000 on the 1,050 miles; this amount added to interest at 4 per cent on capital outlay, Rs. 33,60,000, makes a total of Rs. 54,00,000 for interest and fixed charges to be derived from the earnings of passenger and goods traffic, excluding running charges (b), which constitute the balance of working expenses. These latter charges consist of train staff, fuel, material, wages, &c., which vary directly with the traffic, and include all empty running; they amount, on the average of all the railways in India, to Rs. 4-8 per 1,000 passenger miles, and to Rs. 12 per 1,000 freight ton miles.

14. On all the railways throughout India the net profits from coaching or passenger traffic average one-third of the total net receipts, but a large part of the proposed line runs through a very sparsely populated district, where for many years the earnings from passenger traffic would be small. It will therefore be safe to assume that instead of one-third, one-fourth only of the net profits, that is one-fourth of Rs. 33,60,000, or Rs. 8,40,000, will be derived from coaching traffic. The balance, Rs. 25,20,000, must therefore be derived from goods traffic.

15. With respect to rates and fares, the average passenger fares may be assumed at the low rate of  $2\frac{1}{2}$  pie per mile, or Rs. 12 per 1,000 passenger miles, of which Rs. 7-8 will be net profit and non-fluctuating charges, and Rs. 4-8 the running charges.

16. At the average goods rates in force on the Bombay, Baroda and Central India and Rajpootana-Malwa Railways in 1886, *viz.*, 6-94 pies per ton mile, the saving of 163 miles from Delhi to Karachi, as compared with Bombay, would represent  $3\frac{1}{2}$  annas a maund, or Rs. 6 = 8s. 6d. a ton, and this advantage would be proportionately greater on the higher class staples, piece goods, metals, cotton, oil, &c. It is probable that such a saving, combined with the advantages of uniformity of gauge and Karachi as the port of shipment, would suffice to secure the traffic. It may, however, be necessary to adopt rates which will not give a higher average than 6 pies per ton mile. At this rate the average gross earnings per 1,000 ton miles would be Rs. 31 $\frac{1}{2}$ ; deducting from this the running charges, Rs. 12, the balance, Rs. 19 $\frac{1}{2}$ , represents the net profit and non-fluctuating charges.

17. With these premises the following will be the statement of traffic and expenses to pay 4 per cent. on the estimated capital outlay of Rs.40,00,000 :—

Length of Railway . . . . .	Miles	1,050
Total cost per mile (including Stock) complete . . . . .	R	80,000
Total Capital Outlay . . . . .	"	8,40,00,000
Net Profits (Interest 4 per cent. per annum) . . . . .	"	33,60,000
Non-fluctuating charges, Rs.2,000 per mile per annum . . . . .	"	21,00,000
Total of Interest and non-fluctuating charges . . . . .	"	54,00,000

COACHING AND PASSENGER TRAFFIC average fare per mile . . . . .	Pie.	2½
Net Profit and non-fluctuating charges per 1,000 passenger miles . . . . .	R	7/8
Running charge per 1,000 passenger miles . . . . .	"	4/8
Gross earnings . . . . .	"	12
Total net profit Rs.33,60,000 × ¼ . . . . .	"	8,40,000
Proportionate share of non-fluctuating charges . . . . .	"	5,25,000
Sum of net profit and non-fluctuating charges . . . . .	"	13,65,000
Running charges Rs.13,65,000 × ⅔ . . . . .	"	9,10,000
Gross passenger earnings . . . . .	"	22,75,000
Total passenger miles Rs.22,75,000 ÷ 2½ . . . . .	"	18,72,00,000

GOODS TRAFFIC average rate per ton mile . . . . .	Pie.	6
Net profit and non-fluctuating charges per 1,000 ton miles . . . . .	R	19¼
Running charges per 1,000 freight ton miles . . . . .	"	12
Gross earnings per 1,000 freight ton miles . . . . .	"	31¼
Total net profits from goods Rs.33,60,000 × ⅔ . . . . .	"	25,20,000
Proportionate share of non-fluctuating charges . . . . .	"	15,75,000
Sum of net profit and non-fluctuating charges . . . . .	"	40,95,000
Running charges on goods Rs.40,95,000 × 12/19¼ . . . . .	"	25,52,727
Gross earnings from goods . . . . .	"	66,47,727
Total goods ton miles . . . . .	"	21,27,27,264

#### WORKING EXPENSES AND GROSS RECEIPTS TO PRODUCE 4 PER CENT. ON CAPITAL OUTLAY.

Non-fluctuating charges . . . . .	R	21,00,000
Running charges, Passengers . . . . .	"	9,10,000
" " Goods . . . . .	"	25,52,000
Total Working Expenses . . . . .	"	55,62,000
Net Profit (4 per cent. on Rs.40,00,000) . . . . .	"	33,60,000
Gross Receipts . . . . .	"	89,22,000

Ratio of Working Expenses to Gross Receipts 62 per cent.

18. The average ratio of working expenses to receipts on all the Railways in India in 1886 was 47 per cent.; the higher proportion arrived at in the

foregoing calculation is partly due to the low scale of rates and fares assumed; but on a new railway not subject to damage by floods and storms it is probable that the working expenses would be less than 62 per cent. of the receipts. With the same gross earnings, but with expenses at 52 per cent., the line would pay over 5 per cent. on the capital outlay.

19. Gross earnings of R89,22,000 on 1,050 miles are at the rate of R163 per mile per week, the average receipts per mile per week of the North-Western Railway, in 1886, were R262, and of the Rajpootana-Malwa Railway R228. In considering these figures the great falling off of the wheat trade, owing to failure of crops in the Punjab, must be borne in mind. The average receipts per mile per week of the North-Western Railway in 1885 were R298, and of the Rajpootana-Malwa Railway, R224.

*Comparative Table of Goods and Passenger Mileage.*

	Miles open, 1886.	Freight ton miles in 1886.	Per mile of Railway.	Passenger miles in 1886.	Per mile of Railway.
North-Western Railway . .	1,786	484,332,584	271,183	556,646,049	306,073
Rajpootana-Malwa Railway .	1,476	332,726,651	225,577	415,455,232	281,664
Proposed Line . . . .	1,050	212,727,264	202,597	187,200,000	178,285

20. The above table shows that with working expenses assumed at a ratio to gross receipts far above the average, and with very low rates and fares, the ton mileage and passenger mileage require to earn 4 per cent. on the capital outlay of the proposed railway are very much less than the traffic of the North-Western Railway and the Rajpootana-Malwa Railway in a very unfavourable year, and it must be remembered that the Rajpootana-Malwa Railway is not even a railway terminating at a port. It is thus evident that the proposed railway will certainly pay its way if it secures only a very moderate share of the traffic, and that in years of favourable traffic it must pay very high dividends.

21. Or taking the passenger and goods mileage it shows that if we secure a passenger traffic equal to one-third of the passenger miles of the North-Western system, and a goods traffic equal to four-ninths of that obtained on the same line, we shall earn sufficient to pay 4 per cent. on the capital outlay, and this calculation is based on the very low average fares and rates of 2½ pies per passenger mile, and 6 pies per goods ton mile, while the North-Western received during 1886 2·53 pies per passenger mile, and 6·45 pies per goods ton mile. We have also taken the large percentage of 62 as the proportion of working expenses to gross earnings, as compared with 52·71, the proportion in 1886 on the North-Western, and 50·71 that on the Rajpootana Railway.

22. We trust the foregoing will show the value and importance of the Railway to India, and that it is likely to pay easily 4 per cent. on the construction cost, apart from the very great indirect benefits it will provide, and we solicit the concession of similar terms to those recently granted to the Bengal-Nagpur Railway Company.

23. We would point out that expenditure on railways aids materially the well-being of the country, not only by the vast indirect benefits they confer, but also in a pecuniary point of view, the railways of India, taken as a whole,

having returned interest at the following rates on the total cost of their construction :—

In 1886	.	.	.	.	.	.	.	.	5·9 per cent.
In 1885	.	.	.	.	.	.	.	.	5·84 "
In 1884	.	.	.	.	.	.	.	.	5·27 "
In 1883	.	.	.	.	.	.	.	.	5·91 "

which may be taken as affording *prima facie* evidence that a railway connecting the centre of India with the port nearest to Europe by the shortest route to the sea-board, that can be constructed for the moderate rate of Rs80,000 per mile is likely to a good investment for money raised at  $3\frac{1}{2}$  or 4 per cent.

24. Should the Secretary of State, however, be at the present time disinclined to grant a guarantee for the whole system, we would ask that it may be favourably looked on as one that would be of great benefit to the country, both commercially and politically, and as a whole to be worked up to as soon as the finances permit of a guarantee being given for the whole, and, in the meantime, we would ask that the Umballa-Kalka section (which, we believe, the Government of India is most anxious to have constructed as soon as possible) may be conceded to us, and that we may be favoured with a guarantee of  $3\frac{1}{2}$  per cent., plus one-half of surplus profits on the amount, £300,000, of its anticipated cost.

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No. 473, dated 27th March 1888.

From—Sir JOHN E. GORST,  
To—Sir BRADFORD LESLIE.

I am directed by the Secretary of State for India in Council to acknowledge receipt of a letter, dated 3rd March 1888, signed by yourself, General W. S. Trevor and General F. S. Stanton, advocating the formation of a Company, on Bengal-Nagpur Railway Company's terms, to construct and work a line of railway between Delhi and Karachi, with branches to Rohri and Bahawalpur.

In reply I am desired to inform you that a copy of your letter will be transmitted to the Government of India for their information and report; but I am to add that his Lordship in Council cannot hold out the hope that the financial aid from Government which forms an important feature of your proposals will be conceded.

With reference to the last paragraph of your letter, respecting a railway between Umballa and Kalka, I am directed to say that this project is already receiving the consideration of the Secretary of State and the Government of India in connection with proposals from other parties.

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No. 106 (Railway), dated 17th September 1888.

From—The Government of India,  
To—The Secretary of State for India.

We have the honour to acknowledge the receipt of your Lordship's Railway Despatch No. 32, dated 29th March 1888, relating to a project for a line of railway from Kotri, on the river Indus, through Jeysulmere and Bikanir to Delhi, with one branch from Hyderabad (Sind) to Rohri, and another branch from Bikanir to Bahawalpur.

2. In reply, we have to state that we have arranged for a reconnaissance to be made, during the ensuing working season, of the country traversed by the proposed line, as well as to have statistics collected of the traffic which may be

expected on this route. We have also issued orders for an alternative reconnaissance for a railway from Hyderabad to Pachpadra *viâ* Umarkot, and have permitted an examination to be made if time permits for an alignment from Hyderabad *viâ* Umarkot, Balmir, Nagaur and Didwana, and thence through some point north of Ulwur to Aligarh.

3. We will report the result of these investigations as soon as they are completed.

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## 5.—Delhi-Umballa-Kalka Railway.

No. 11 (Railway), dated 27th January 1887.

From—The Secretary of State for India,

To—The Government of India.

I forward herewith a proposal by the Directors of the Bombay, Baroda and Central India Railway Company for constructing a railway from some point on the Rajpootana line, north of Ajmere *via* Sambhar, to Karnal, Umballa, and Kalka, with branches to Delhi and Kaithal.\* The scheme at first proposed by the promoters was a line starting from near Rewari on the Rewari-Ferozepore Railway, but it has since been extended in the way indicated, partly with the view of avoiding the necessity of doubling hereafter that portion of the Rajpootana system which lies between Delhi and Ajmere, and partly for the purpose of providing greater facilities for the development of the Sambhar Lake salt manufacture.

2. I observe by the correspondence which forms the appendix to Mr. Wood's letter of 1st December 1886 that the question of effecting a communication between Delhi and Karnal by means of a light railway has already been under the consideration of the Punjab Government, in consequence of proposals made by Mr. Branton and others, and that the matter has been referred to your Government. If these proposals for the line between Delhi and Karnal have not resulted in your adopting views which may preclude such a course, I would invite your consideration of the larger undertaking now suggested.

3. I request that you will furnish me with your opinion on the merits of the scheme generally, and as to whether the route proposed, either for the longer or the shorter line, is that which you would approve, both on political and commercial grounds and from an engineering point of view; whether, moreover, you consider that the condition of the traffic on the line between Ajmere and Delhi is such as to justify the conclusion that further accommodation will soon be required in the shape of an additional line of rails if relief is not provided by a separate railway, and, if so, whether any requisite relief may best be afforded in the manner proposed, or whether any other system of additional lines might be preferable.

4. Your Excellency will observe that the Directors of the Bombay, Baroda and Central India Railway Company expect to be able to bring out the scheme without any direct aid from Government by enlisting the support of their shareholders. It is scarcely necessary for me to remark that any well devised scheme for the formation of branch or feeder lines, which would serve the requirements of districts unprovided with railway communication and would increase the traffic of existing lines, is deserving of most careful consideration, provided that other circumstances are favourable and a guarantee from the State is not required, and I see no objection to fair and reasonable arrangements being made for working the new lines through the agency of an existing Company. But you will perceive that in this case the proposals include the concession of a working agreement with the Bombay, Baroda and Central India Railway Com-

pany on terms which would apparently confer considerable advantages upon the new line at the expense of the Rajpootana-Malwa system, and therefore of the State, to which that railway belongs, and which now receives four-fifths of the profits after five per cent. has been paid on the capital. It is for your Government to consider whether these terms are not in excess of what may be considered reasonable, and, if you decide in the affirmative, to state what you would be prepared to recommend in place thereof. The proposed terms will be found in the appendix to Mr. Wood's letter of 1st December 1886, in the memorandum of "modifications and additions" which it is proposed shall be introduced into a similar contract to that with the Bengal and North-Western Railway Company, the terms of which the promoters propose to take as the basis of an agreement.

5. Among the "additions" will also be found one which would give the new Company the prior right to extend, on the same terms, its undertaking by any lines that can be worked in conjunction with the Bombay, Baroda and Central India and Rajpootana-Malwa Railways I shall be glad to receive your opinion on this point.

6. In paragraph 5 of their letter of 1st December 1886, the promoters offer, as an alternative to the Bengal and North-Western terms, the same condition for working the new line by the Bombay, Baroda and Central India Railway Company as those upon which the Cawnpore-Achnera Railway is worked for the Government.

7. Assuming that it will be necessary to make some arrangement with the new Company for working the line in question previously to the scheme being placed before the public, I request that I may be favoured with your views upon the several proposals and upon the various conditions embodied in them. In any case, it would be clearly right to provide that the Secretary of State should have the power to purchase, on reasonable terms, such lines as those now projected when the present agreement with the Bombay, Baroda and Central India Railway Company for working the Rajpootana-Malwa Railway terminates.

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Dated the 1st December 1886.

From—T. W. Wood, Esq.,

To—The Under-Secretary of State for India.

I am instructed to enquire, on behalf of the gentlemen named in the margin,

Major General J. S. Trevor,  
R. E.  
Lieutenant-General C. H.  
Dickens, R. A.  
Major-General R. H. Keatinge, V. C.  
Mr. J. Mitchell.  
Mr. D. T. Robertson.  
Mr. S. J. Wilde.  
All of whom are Directors  
of the Bombay, Baroda and  
Central India Railway Com-  
pany.

whether the Secretary of State for India would be prepared to grant to a Company to be formed the same general conditions as have been allowed to the Bengal and North-Western Railway Company for the construction of a Metre Gauge Railway from a Station on the Rewari-Ferozepore Railway, near Rewari *viâ* Rohtuk, Karnal and Umballa to Kalka, with branches to Delhi and Kaithul.

2. The terms granted to the Bengal and North-Western Railway Company will require some modifications that experience has shown to be desirable, and others that will be needed to meet the contingency of the termination of the agreement between Government and the Bombay, Baroda and Central India

Railway Company for the working of the Rajputana-Malwa Railway, and of the lease by the last-named Company of their own line. These modifications will not affect the general intention that the Railway proposed is to be worked without any direct guarantee of interest, and with only a free grant of land from Government, but this last is not essential. The nature of these modifications is indicated in *Appendix A* to this letter. It may be desirable, with a view to save needless expense, that the Company to be formed should have a right to the conjoint free use of any large bridges on the Grand Trunk Road between Karnal and Umballa that can be adapted for the transit of their Rolling Stock, the Company undertaking their maintenance and paying all cost of adaptation—Government retaining existing tolls, if any.

3. The proposed line is shown on the accompanying map. It will, including branches, be about 250 miles in length, and as, if bridges on the Grand Trunk Road can be utilised, there are no obstacles of any moment to be overcome, except the bridge over the Gugger River, it can probably be built and equipped up to the same standard as the Rewari-Ferozepore Railway for less than a million sterling, of which £300,000 might hereafter be raised on Debentures.

4. It is hoped that, if the scheme can be brought out under reasonably favourable conditions and under the auspices of the Proprietors of the Bombay, Baroda and Central India Railway Company, with an understanding that the line will be managed and worked by that Company, after completion, under agreement, on the general basis of the Bengal and North-Western Railway Contract, modified as mentioned in the appended memorandum, the money needed will be subscribed by the public, and it is believed, from the population and fertility of the districts to be traversed, that the line will be a financial success. In any case, its construction is certain to lead to a large increase in the earnings of the Rajputana-Malwa and Bombay, Baroda and Central India Railways, and may perhaps also, when complete, improve those of the East Indian Railway.

5. If the Secretary of State does not deem it desirable to accept a scheme of the scope sketched out in the papers attached to this letter, which is drawn on the main lines of the Rajputana-Malwa Working Agreement, the gentlemen on whose behalf I write will be ready to accept from the Rajputana-Malwa Railway Administration in their entirety (with the addition of the parts in the present proposal, marked A to N, not printed in italics,) the terms on which the Cawnpore-Achnera Railway is worked for Government by the Bombay, Baroda and Central India Railway Company, interest on paid-up Capital being disbursed from Capital during construction, and the line taken over by the Bombay, Baroda and Central India Railway Company in sections as completed, the new Company standing in other respects in the place of the Government of the North-Western Provinces, who receive 4 per cent. per annum on their invested Capital, irrespective of the earnings of the Cawnpore-Achnera Railway, and four-fifths of all surplus over that rate.

6. I append copies of papers (*see Appendix B*) on the subject of a light railway from Delhi to Karnal, as to which Mr. Brunton, M.I.C.E., has been in correspondence with the Punjab Government.

7. A deputation will attend at the India Office, if desired, to enter into further explanations.

8. An early answer is solicited.



## APPENDIX A.

*Memo. of Modifications proposed in the provisions of the Bengal and North-Western Railway Contract, and additional clauses necessary, but not inclusive of changes of dates and verbal alterations.*

Reference letter (See para 5).	Bengal and North-Western Railway Contract.		Modifications.
A	Section 6	Surveys . . .	The charge to the Company for previous Surveys to be limited to the cost of such Surveys as the Company consider to be of use to them, and such cost in no case to exceed Rs100 per mile of the length of the section of the line for which the Surveys are taken.
B	" 7	Land . . .	The Company to pay for the land if desired—i.e., to reimburse Government all sums they disburse in its acquisition.
	" 9	Telegraphs . . .	<i>The Company only to carry free such telegraph employes and materials as are required on its own line or the Rajputana-Malwa and Bombay, Baroda and Central India Lines</i>
C	" 14	Equipment . . .	The Company to provide in proportion to traffic the same equipment as required for similar quantities of traffic on the Rajputana-Malwa Railway.
	" 26	Post Office . . .	<i>The work done to be paid for by mutual agreement, but at a rate not exceeding the ordinary rate for parcel service settled at the last Railway Conference, and ordinary class fares for employes.</i>
	" 27	Payment for Special Service.	<i>To be paid for at ordinary rates.</i>
	" 39	Participation in Profits.	<i>After completion of the construction of the line throughout (when the charge of interest to Capital will cease) all net profits, after payment of Debenture interest, to belong exclusively to the owning Company, until its Shareholders have received 5 per cent. per annum from the date of such completion on their paid-up Capital. The surplus over that amount to be thereafter divided in the proportions of four-fifths to the owning Company, and one-fifth to the Rajputana-Malwa Railway as a credit to the Revenue Account of the latter.</i>
D	" 45	All Establishment charges to be debited to Revenue after entire opening.	To be modified so as not to force Establishment engaged on construction to be paid out of Revenue on discharge Maintenance for twelve months after entire opening to be also debited to Capital.
E	" 46	Audit Charges . . .	Government to pay their own Audit Establishment.
F	" 55	Termination of Contract.	The Company to have the right to call on Government to take over the Railway, at the time of the termination either of the Agreement with the Bombay, Baroda and Central India Railway Company for working the Rajputana-Malwa Railway, or of the last-named Company's lease of its own line, at a price equal to (a) twenty-five times the average yearly net dividends paid to the Shareholders for the previous two years, plus (b) the cost of the land as shown on the Company's books; Government also to assume all responsibility for the Debenture debt and interest thereon at the date of transfer.
G	" 62	Arbitrators . . .	To be the Company's Consulting Engineer and that of Government in London.

*Memo. of Modifications proposed in the provisions of the Bengal and North-Western Railway Contract, and additional clauses necessary, but not inclusive of changes of date and verbal alterations—continued.*

REFERENCE LETTER (See para. 5)	ADDITIONAL CLAUSES.
H	(a) Government to allow all Capital Stores needed for construction and equipment to be carried over the Rajputana-Malwa Railway at the rates charged by it for its own Capital Stores, and for Revenue purposes at Revenue rates.
I	(b) Work in Shops of Rajputana-Malwa Railway for new line to be carried out on terms that regulate work done between separate State Railways
J (not including words in italics.)	(c) Government to allow the Bombay, Baroda and Central India Railway Company to work the line as part and parcel of the Rajputana-Malwa Railway, a separate account being kept of its receipts, and the working expenditure, after deduction of <i>Government Supervision in India</i> and Home Establishment charge, including Directors, Consulting Engineer, Secretary, &c., to be divided half-year by half-year in proportion to gross receipts. Maintenance also to be kept distinct when required by the new Company.
K	(d) Government to allow the Bombay, Baroda and Central India Railway Company to conduct the Home business of the new Company in their offices, the new Company paying a fair sum to be agreed on for the house-room and clerical service thus rendered. The remuneration of the Directors and the Secretary of the new line to be kept quite apart from the Bombay, Baroda and Central India Railway Company's accounts.
	(e) <i>Government to lend the Company an Officer with four or five assistants from the Public Works Department during the time the line is under construction; the Officer to be selected by the Company, who will pay them as well as make up the usual pension allowance.</i>
L	(f) The designation of the new Company to be "The Simla Railway Company," or some other name not identifying it with the Bombay, Baroda and Central India Railway Company.
	(g) <i>The carriage of goods and parcels between Kalka and Umballa by the Postal Authorities to cease on the opening of the line over that section and the Company to have the right to take over the cart and tonga service, now conducted by the Postal Department between Simla and Kalka, if they desire to do so, on terms to be settled by valuation of stock without any consideration of profit, if any, now made by the Postal Department on its management. In case the Company do take over this cart and tonga service, Government to entrust the carriage of mails to the Company on terms to be settled by mutual consent, subject, if necessary, to arbitration, as already provided, giving the Company reasonable profit on the service.</i>
	(h) <i>The new Company to be allowed by the Bombay, Baroda and Central India Railway Company a rebate on all through traffic (goods, passengers and parcels) carried to, or received from, Stations on the new line exceeding fifty miles in distance by rail from the nearest Station on the Rajputana-Malwa Railway, of 5 per cent. on the sum received therefor by the Bombay, Baroda and Central India and Rajputana-Malwa Lines. Such rebate to be subject to a pro rata reduction whenever the net earnings on the Capital of the new line exceed 5 per cent. per annum and to cease when they reach 10 per cent. per annum. The apportionment of working expenses between the Rajputana-Malwa Railway and the new line to be made before such rebate is credited to the latter, but after its deduction from the gross receipts of the former.</i>
M	(i) The new Company to have the prior privilege to other competitors on the same terms of extending its undertaking either by means of branches of its present proposed line, or by other lines that can be worked in conjunction with the Bombay, Baroda and Central India and Rajputana-Malwa Railways, and that will tend to develop the Revenues of those undertakings.
N	(j) Government to have a right to inspect, whenever desired, all accounts and all correspondence, except that with the Company's legal advisers, and to appoint a Director, after the Capital has been subscribed, who will have the same powers and privileges as any other Director of the Company, except as regards legal correspondence.

## APPENDIX B.

*Extract (para. 15) from Agent's despatch No. 41, dated 15th October 1886.*

*Subject—Delhi-Karnal Light Metre Gauge Railway Project.*

I send herewith, for the information of the Board, copy of some demi-official correspondence on the subject of the suggested Delhi-Karnal Light Railway, the furtherance of which it will be noticed I proposed to aid as much as possible.

It, however, now appears that the scheme is not altogether of local origin, but promoted by Mr. Brunton, M.I.C.E., and, as such, would not call for professional assistance from this Company.

I hope, however, that my movement in the matter will meet with the approval of the Board. The district traversed is very thickly populated and full of produce, and the construction of the line would, in my opinion, benefit the Rajputana-Malwa Railway considerably.

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No. 117 (Railway), dated 24th June 1887.

From—The Government of India,

To—The Secretary of State for India.

We have the honour to acknowledge the receipt of Your Lordship's Railway Despatch No. 11 of the 27th January 1887, inviting an expression of your opinion as to the merits of a scheme submitted by the Directors of the Bombay, Baroda and Central India Railway Company, for the construction of a line of railway, on the metre gauge, from some point on the Rajputana-Malwa Railway line, north of Ajmere, *vid* Sambhar, to Karnal, Umballa, and Kalka, with branches to Delhi and Kaithal.

2. We are of opinion that the proposal is open to objection on the ground that it is virtually a request for permission to duplicate the existing means of communication between Kishenghur and Umballa by a new administration, whose interests would, to a large extent, be antagonistic to those of the existing lines, *viz.*, the Rajputana-Malwa and the North-Western Railways; and that in the event of the shareholders being disappointed in their anticipations of traffic, we should lay ourselves open to considerable pressure by the Company to grant a guarantee, or purchase the undertaking outright.

3. A request of the above nature, we have little doubt, would at no distant date follow the sanction to the scheme, inasmuch as in the competition for through traffic between Delhi and Umballa, the North-Western Railway would very naturally monopolize such traffic, leaving to the new Railway Company merely the local traffic to work, which in our opinion would never be sufficient to prove remunerative.

4. Moreover, such a line, if made at all, should, we consider, be on the standard and not on the metre gauge as proposed, because of the inconvenience that would necessarily be experienced in having two railways of different gauges in the same district, *viz.*, on that portion of the projected line lying between Delhi and Umballa, to say nothing of the question of the conversion to the 5' 6" gauge of the existing Rajputana-Malwa Railway, as an alternative, cheaper and more desirable than doubling, being at present under consideration.

5. There are still further objections to the scheme, such as the probable costliness of the line and its liability to frequent damage by floods in the northern portion, between Thanesswar and Umballa, in consequence of the heavy drainages to be crossed.

6. With regard to Mr. Brunton's proposal for a light railway from Delhi to Karnal, referred to in paragraph 6 of the letter, dated 1st December 1886, from the Board of Directors of the Bombay, Baroda and Central India Railway Company, which forms one of the accompaniments to Your Lordship's despatch under reply, we beg to append, for Your Lordship's information, copy of our Proceedings, R.C., October 1886, Nos. 361-374A., on the subject, from which it will be perceived that the scheme was negatived.

7. We would take this opportunity of reporting, for Your Lordship's information, that we have recently received from Messrs. Sanderson and Company, Solicitors, Calcutta, certain proposals on behalf of a syndicate formed to construct and work a line of Railway from Delhi to Thanesswar with capital to be

raised, partly in the London and partly in the local market, and would merely add that we consider this scheme to be open to most of the objections which render the proposal of the Bombay, Baroda and Central India Railway Company above referred to inadvisable, *viz.*, (1) that such a line does not seem to be really needed, or likely to prove remunerative; (2) that it will compete with the existing North-Western Railway; and (3) that its extension northwards would prove costly and precarious.

In addition to the above, however, the contemplated arrangement for working the line by the agency of the East Indian Railway would tend to produce results similar to those anticipated from the transfer to that Company of the Delhi-Saharunpur Section of the North-Western Railway, which is deprecated in our Railway Despatch No. 107 of 3rd June 1887.

8. The views of the Punjab Government on both the proposals dealt with in this Despatch will be learned from their two letters appended. In their opinion that the Thanesswar traffic could be best served by a branch from the North-Western Railway we entirely concur. As to the probable effects of the agency of the East Indian Railway in this quarter we may refer to their letter No. 2774 of 29th April, which was forwarded with our Despatch No. 107 Railway, dated the 3rd instant.

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No. 2129, dated 28th March 1887.

From—E. E. OLIVER, Esq., M.I.C.E., Under-Secretary to Govt., Punjab,  
Public Works Dept.,

To—The Secretary to the Government of India, Public Works Department.

In reply to Public Works Department No. 243 R.C., dated 10th instant, forwarding, for an expression of opinion by His Honour the Lieutenant-Governor, Despatch from the Secretary of State, relative to a proposal by the Directors of the Bombay, Baroda and Central India Railway Company to construct a Railway from Kishengurh to Kalka with branches to Delhi and Kaithal, I am directed to convey the following remarks.

2. The line would not, in the opinion of His Honour, appear suitable so far as the interests of this province are concerned. The most important Railway extensions that could at present be undertaken in this Province would appear to be those tending to afford the export trade the shortest route to the seaboard. For the bulk of this the natural outlet is undoubtedly Karachi. In fact, broadly speaking, it may be said that this is the case for most of the grain tracks north-west of a line drawn through Saharanpur and Rohtak. South of that the usual outlet would doubtless be Bombay, but to so align the Railways that the export grain north of it should be compelled to take the Bombay route would be to impose a perpetual additional impost.

3. From some of the best grain centres south of the Sutlej, Karachi is about the same distance as Ahmedabad, while the latter is 280 miles from Bombay.

4. A broad gauge line will shortly be constructed from Patiala to Bhatinda, and as already urged on the Government of India, in this office No. 2807, dated 19th May 1886, its extension to Bahawalpur would appear to be the most useful Railway undertaking that could be carried out in the Province at present. By such a line down the valley of the Sutlej, the distance from Umballa to Karachi would be nearly 100 miles shorter than the present proposal would bring Umballa to Bombay.

5. Further, it would appear to Sir C. Aitchison highly undesirable, for

reasons both military and commercial, to carry out through lines of the kind on any but the standard gauge.

6. As regards the proposal for constructing a Railway between Delhi, Panipat, and Karnal, referred to in your No. 249 R.C., dated the 12th idem, I am directed to observe that it is doubtful if the present traffic would justify anything beyond a cheaply-constructed feeder line.

7. Such feeder lines might with advantage be constructed on the standard gauge with rails withdrawn from the main line, but in regard to this a subsequent communication will be submitted to the Government of India.

No. 77C, dated Simla, the 13th June 1887.

From—Colonel J. P. STEEL, R.E., Officiating Secretary to Government,  
Punjab, Public Works Dept.,

To—The Secretary to the Government of India, Public Works Department.

With reference to the letter from the Public Works Department, No. 386 R.C., dated the 21st April 1887, I am

From Financial Commissioner, Punjab,  
No. 5033, dated 13th June 1884, and its en-  
closures. Printed Proceedings, Public Works  
Department, Punjab, Railway A, March 1887,  
Nos. 1-35.

desired to forward herewith, for the  
information of the Government of  
India, a copy of the papers noted in  
the margin, relating to the projected

line of railway between Delhi and Thanesswar, and to state that, so far as His Honour the Lieutenant-Governor is able to judge from the returns before him, a line laid with old rails, on the plan proposed in this office No. 2129, dated the 28th March 1887, would be the most likely to answer, and such a line could be most conveniently worked in connection with the North-Western Railway.

No. 107 (Railway), dated 3rd June 1887.

From—The Government of India,

To—The Secretary of State for India.

In the Railway Despatch of Your Lordship's predecessor, No. 42, dated the 6th May 1886, our opinion was asked on a proposal made by the East Indian Railway Board to take charge of and work the section of line between Ghazia-  
bad and Saharanpur which now forms part of our North-Western Railway.

2. In this despatch Lord Kimberley pointed out that it seemed very probable that the general convenience of the community would be furthered by some change in the point up to which the East Indian Railway then worked the line; but desired to receive our opinion on the subject, not only with reference to the interests of the local traffic, but also to those of the export trade, adding that it is very important to maintain the complete freedom of the latter from all artificial hindrances arising from possible conflicts of rival Railway Administrations. His Lordship further pointed out that the position of the Oudh and Rohilkhand Railway in relation to this matter would require consideration, and that, if possible, any arrangement that might be come to should be such as would continue to be suitable were any change to be made in the agency for working that Railway.

3. The possibility of such an arrangement in the future was mentioned in paragraph 7 of our Railway Despatch No. 141 of the 5th September 1884, and when considering the arrangements for the future working of the North-Western Railway, the matter was further discussed. The information then before us

was, however, insufficient to permit of any decision being come to on the question, and we decided to postpone its consideration until we had the experience of a year's working of the new system. Our Director General of Railways was therefore instructed, in December 1885, to obtain, from the Manager of the North-Western Railway, and submit, a report on the question.

4. We have now to lay before Your Lordship a copy of this report, together with the opinions of the Governments of the North-Western Provinces and Oudh and the Punjab to whom we referred the same for consideration. (Enclosures 1, 2, and 3 to this Despatch.)

5. The Government of the North-Western Provinces and Oudh are opposed to the suggested transfer, and base their objection, first, on the necessity for absolute freedom for the local trade of the rich district traversed by that particular section of railway, which they believe would be impaired by its transfer into the power of one or other of the great competing lines to Calcutta or Bombay; and secondly, on the inexpediency of permitting the whole export trade of the richest portion of the Province to be overruled by one powerful Company, controlling all the outlets of its main arterial line.

6. The Government of the Punjab consider that, so far as the interests of the Province are concerned, it would be very undesirable to interpolate a length of foreign line in the through route from the Punjab to Bombay which would be the practicable effect of making over the Ghaziabad-Saharanpur section to the East Indian Railway Company; and that there do not appear to be any compensating advantages.

7. The Director of our North-Western Railway, while dealing also with the question of the effect of the proposed transfer on local and export traffic, gives under heading XI of his report strong reasons against the proposed transfer, as a matter of convenience for traffic working, and explains that neither on economical nor administrative grounds is the transfer desirable.

8. We have carefully considered the views set forth in the above communications which Your Lordship will no doubt peruse in detail, and for the reasons explained in them and briefly summarised in the foregoing paragraphs, we have come to a conclusion adverse to the proposed transfer, which, in our opinion, neither the public convenience nor the interests of the local or export traffic demand.

9. The question of the effect of the transfer on the Oudh and Rohilkhand Railway is dealt with in the letter from the Government of the North-Western Provinces and Oudh, and it seems unnecessary to say more on the matter than that it is undesirable that that system should have all its main outlets controlled by any one Company.

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No. 143 D. G. Ry., dated 28th January 1887.

From—Colonel L. CONWAY-GORDON, Manager, North-Western Railway,  
To—The Director General of Railways.

As desired in your letters Nos. 061T. and 421T., dated respectively the 31st December 1885, and the 14th June 1886, I have the honour to submit the following report upon the questions raised in the enclosure to your letter, with regard to the proposal for making over to the East Indian Railway the section of line between Saharanpur and Ghaziabad.

II. The points in the correspondence specially noted for consideration are as follows :—

- (a) Whether Saharanpur, or some other station nearer Lahore, is the  
In Government of India letter No. 563 R.T. dated June 9th, 1886. “shed” whence traffic flows to Kurrachee on the one side, and to Calcutta and Bombay on the other.
- (b) The proportion in which the traffic is divided between Bombay and Kurrachee.
- (c) The probable effect of interposing the East Indian Railway between the North-Western Railway or Oudh and Rohilkhand Railway, and the Bombay, Baroda and Central India Railway.
- (d) The approximate gross and net traffic earnings of the section of line in question.
- (e) The effect of the proposed transfer on the general convenience of the  
In Secretary of State's No. 42 Ry., dated 6th May 1886. community.
- (f) Its effect upon the export trade of India.
- (g) Its effect upon the future position of the Oudh and Rohilkhand Railway system.
- (h) The effect, from a traffic point of view, of eliminating Ghaziabad as  
In Government of India No. 1184 R.T., dated 28th December 1885. a frontier transfer station, and making Saharanpur the great focussing centre and frontier station of the North-Western Railway, East Indian Railway, and Oudh and Rohilkhand Railway systems.

III. The questions raised in *A*, *B*, *E* and *F* are so interwoven that I shall deal with them under one head; the points raised in *C* and *G* are also almost identical and will be similarly dealt with.

IV. One important issue has not been referred to in the correspondence, and this I shall venture to include, *viz.*—

- (i) The effect of the proposed transfer upon the internal and interprovincial trade of the Punjab, of the North-Western Provinces and of Sind.

V. A statement giving the information called for under paragraph *D* is enclosed, and although based upon the average working expenses of the whole line, which owing to its favourable situation is far in excess of the actual working expenses of the section, shows that the annual net income during the past three years of the section of Railway in question has been about Rs. 8,60,053.

VI. Two additional statements are also enclosed, showing that the stations between Saharanpur and Delhi inclusive, during the past five half-years, received and despatched on an average in each half-year 620,363 passengers and 3,139,845 maunds of goods, representing about Rs. 29,00,000 per annum of the gross income of the North-Western Railway. Of this total traffic, the following very small quantities alone were booked to and from foreign Railways :—

	Passengers. No.	Goods. Mds.
To and from East Indian Railway . . . .	31,254	504,154
„ Bombay, Baroda and Central India Railway . . . . .	1,672	981,335
„ Oudh and Rohilkhand Railway . . . .	10,226	50,069

The East Indian Railway proportion of the bookings were only 5 per cent. of the passengers, and less than 17 per cent. of the goods traffic.

The statements also show that on an average 916,292 maunds of goods and 29,569 passengers, booked to and from stations on the other sections of the North-Western Railway and on foreign lines, passed completely over the Saharanpur-Ghaziabad section; a considerable portion of this traffic was booked to and from the Bombay, Baroda and Central India Railway, and would have been seriously affected had the Saharanpur and Delhi section been in the hands of a competing line. Again, a large portion of the traffic *viâ* Ghaziabad went to stations on the Oudh and Rohilkhand Railway in the North-West Provinces; consequently, the traffic *viâ* Ghaziabad, in future periods, will be considerably affected by the unrestricted development of the Oudh and Rohilkhand Railway route by Saharanpur.

VII. With these remarks I will proceed to deal *seriatim* with the several points raised.

VIII. With regard to heads *A, B, E* and *F*—*the Traffic Shed*—

(1) Geographically, the natural shed of the export traffic is at or near Saharanpur, the respective distances of this place from the sea-board being as follows:—

	Miles.
Bombay <i>viâ</i> Delhi . . . . .	1,000
„ „ Indian Midland (when completed) . . . . .	1,056
Howrah „ East Indian Railway . . . . .	1,040
„ „ Oudh and Rohilkhand Railway (when Benares bridge is completed) . . . . .	1,014
Kurrachee . . . . .	1,058

but, as a matter of fact, traffic is booked between Bombay and Howrah and Ludhiana, which is 121 miles north of the geographical shed, and between Kurrachee and Delhi, which is 111 miles south of it, and a keen competition is maintained for the produce of the area lying between these two limits.

(2) It is in every way extremely desirable to put an end to this competition, and this I consider to be quite possible, in a manner that would be equally advantageous to the merchant and the carrier, as explained in my letter No. 142 D. G. Ry., dated 27th January 1887, an extract from which is appended for ready reference.

(3) Although interested to a great extent in the local traffic, the North-Western Railway is very little interested in the export traffic of the Saharanpur-Ghaziabad section, as it is perfectly immaterial to that line whether traffic is booked *viâ* Ghaziabad or Saharanpur to Howrah, or *viâ* Delhi to Bombay. The rates to those places are less than the rate to Kurrachee, and that port can consequently be made use of only under special circumstances, such as completion of time bargains, &c.

(9) The North-Western Railway now acts, and ought to continue to act, as an independent and impartial arbiter between the competing lines; and this arrangement is, without doubt, far more likely to be beneficial to trade than handing over the debatable ground to the mercies of either of the competitors for its traffic.

IX. With regard to heads *A, B, E*, and *F*—*Proportion of sea-board trade passing in each direction*—

(1) The statement already referred to in paragraph VI hereof will show that the export traffic of the Saharanpur-Ghaziabad section, although large, is very much smaller than the value of its internal trade; also that the value of its exports to the Bombay, Baroda and Central India Railway is much greater than the value of the exports to the East Indian Railway.



(2) But the figures quoted in the statement referred to include *all* bookings to foreign Railways, both to the sea-board and to intermediate foreign stations.

(3) If the traffic by foreign Railways to inland markets be eliminated, and the bookings to the sea-board alone stated, they will stand as follows, as extracted from the statistical tables of this Railway for the 1st half of 1886 :—

	Passengers. No.	Goods. Mds.
To and from Calcutta . . . . .	1,741	60,764
„ Bombay . . . . .	305	261,075
„ Kurrachee . . . . .	100	28,938

No doubt the grain traffic in the half-year ending June 1886 was slack; but even if these figures be trebled, the proportion of export traffic to the inter-provincial traffic would remain in the proportion of 30 to 70.

(4) The bulk of the inter-provincial trade is with stations on the North-Western Railway, and consists of traffic in food and articles of every day requirements; there is also an exceptionally good passenger traffic with stations on the North-Western Railway in the Punjab Province: and it would be unwise to make over this traffic to any other Administration, more especially when the interest of that Administration would undoubtedly be to unduly favour the export trade, which would travel over 1,000 miles of its line, rather than to encourage the internal trade, which would run over a very small mileage.

(5) The general convenience of the export merchants, and of the local traders, as well as of the travelling public, will be more considered by a Railway that has no inducement to favour any particular class of traffic or route, than by a Railway whose main interests are known to be the diversion of the present stream of traffic from Bombay to Calcutta.

X With regard to heads C and G—*Effect of the transfer on the Oudh and Rohilkhand and Bombay, Baroda and Central India Railways*—

The main points affecting the Oudh and Rohilkhand, and Bombay, Baroda and Central India Railways are as follow :—

(1) Chandausi is 77 miles nearer to Saharanpur by the Oudh and Rohilkhand Railway line than it is by way of Aligarh.

(2) Lucknow is nearer to Saharanpur by the direct route than by the other two routes, the distances being *viâ* Ghaziabad and Aligarh, 414, *viâ* Ghaziabad and Cawnpore, 402, and *viâ* Oudh and Rohilkhand Railway direct, 337.

(3) Roorki (for Hurdwar) is almost equi-distant from Toondla (for Agra) by either Ghaziabad or Chandausi, the distances being 235 and 234 miles respectively.

(4) Roorki is nearer to Lucknow by the direct route than by way of Aligarh, the distances being *viâ* Aligarh, 436, and *viâ* Oudh and Rohilkhand Railway direct, 315 miles.

(5) Cawnpore is almost equi-distant from Roorki either by Ghaziabad or Lucknow, the distances being as follows :—

	Miles.
From Roorki <i>viâ</i> Ghaziabad and Saharanpur . . . . .	378
Ditto <i>viâ</i> Lucknow, by Oudh and Rohilkhand Railway . . . . .	361

(6) Benares will be nearer to Saharanpur by the direct route than *viâ* Ghaziabad, the distances being 539 and 577 respectively, while the distance from Benares to Roorki will be, East Indian Railway 599, and Oudh and Rohilkhand Railway 527.

(7) It has already been stated that a very large portion of the traffic between the North-Western Railway and East Indian Railway is for inland markets; these markets include Chandausi, Roorki, Cawnpore, Agra, Lucknow, and Benares.

(8) There will consequently be a keen competition between the Oudh and Rohilkhand Railway and the East Indian Railway for the goods traffic of the Saharanpur-Ghaziabad section line to these points, as well as for the North-Western Railway traffic originating north of Saharanpur, which will either pass over the Saharanpur-Ghaziabad section for transit *viâ* Ghaziabad and the East Indian Railway, or be diverted at Saharanpur for transit *viâ* the Oudh and Rohilkhand Railway. There will also be keen competition for the pilgrim traffic to Hurdwar from and to all the large towns.

(9) Another important point is that there is a considerable passenger traffic between the Saharanpur-Delhi section, and stations on the East Indian Railway and Oudh and Rohilkhand Railway, that is capable of being diverted in either direction. This consideration also applies to the traffic between this line and the Saharanpur-Chandausi section of the Oudh and Rohilkhand Railway. For instance, Muzaffarnagar, which is one of the most important stations on the line, 36 miles below Saharanpur, can book to Chandausi or beyond by either route on equal terms; but all traffic from Muzaffarnagar to stations short of Chandausi, or from stations between Muzaffarnagar and Saharanpur, to the Oudh and Rohilkhand Railway would, if not interfered with, invariably go by the shorter route *viâ* Saharanpur.

(10) Again, a traffic has sprung up since the opening of the Oudh and Rohilkhand Railway between Meerut and Delhi on the North-Western Railway and the stations beyond Roorki on the Oudh and Rohilkhand Railway. The equidistant points by either route to and from those stations are as follows:—

From Meerut to 33 miles north of Chandausi, or say Mughalpur.

From Delhi to 59 miles ditto ditto, or say Dhampur.

All this traffic would be considerably affected by the transfer of the Saharanpur-Ghaziabad section to the East Indian Railway.

(11) The Oudh and Rohilkhand Railway has for years past been blocked at all points by the East Indian Railway, and it would not appear advisable to close its only connection with a disinterested Railway almost as soon as it has been opened.

(12) A considerable traffic in salt and European imports may be anticipated from the Bombay, Baroda and Central India Railway *viâ* Delhi to stations on the Chandausi section of the Oudh and Rohilkhand Railway near Roorki; which it would be in the interest of both the East Indian Railway and Oudh and Rohilkhand Railway to bring *viâ* Agra, although it is the longer route and deprives the Bombay, Baroda and Central India Railway of considerable lead.

(13) I do not think it advisable, either in the interest of the Bombay, Baroda and Central India Railway, or of the general community, to give the East Indian Railway the power of deranging the foreign traffic passing over the Saharanpur-Ghaziabad section.

XI. With regard to head H—*Effect of making Saharanpur the general junction*—

I do not anticipate any benefit from eliminating Ghaziabad as a frontier station, and making Saharanpur a great focussing centre for the following reasons:—

(1) The transfer work between the East Indian Railway and the North-Western Railway must be done somewhere, and if the proposed change did not affect the amount of goods transferred, it would be practically immaterial where the work was carried on.

(2) But, as a matter of fact, the proposed change would largely increase the amount of work to be done. The bulk of the export traffic is to the Bombay,

Baroda and Central India Railway *viâ* Delhi; and there is a very large traffic from Ludhiana, Amritsar, Kheora, Pindi, and other stations on the North-Western Railway north of Saharanpur, to Delhi, Meerut, and Muzaffarnagar; so that the transfer work of the North-Western Railway so far from being reduced by the proposal, will be increased, as the present very large local traffic would at once be converted into foreign traffic.

(4) All 3rd class passengers *viâ* Delhi to stations on the Bombay, Baroda and Central India Railways will have to change both at Saharanpur and at Delhi, two changes instead of one as at present.

(6) The Bombay, Baroda Railway will be severed from direct communication with the North-Western Railway, and its traffic will require to be accounted for, first to the East Indian Railway at Delhi and then to the North-Western Railway at Saharanpur; instead of being handed over direct to the North-Western Railway at Delhi as at present.

(7) The North-Western Railway will lose touch of many of its most important contributive stations.

(8) It is questionable whether focussing at large centres is not counter-balanced by the disadvantages attendant upon doing a large amount of work in a limited time and area, the focussing of trains having certainly been found most disadvantageous and expensive at Lahore. An enormous amount of work has to be got through in a few hours, a system which necessitates the maintenance of a large staff who remain idle for the rest of the day.

(9) It will necessitate the entire rebuilding of the Saharanpur station, together with the relaying of the whole yard, including the removal of the engine-sheds. The North-Western Railway staff and working arrangements at Saharanpur are designed for working 100 miles in either direction, and if one-half of the work is taken away a large capital outlay will be rendered unproductive.

The East Indian Railway have already surplus accommodation at Ghaziabad, and more of this would be rendered useless if the amount of work done at Ghaziabad be still more reduced.

(10) From a military point of view Ghaziabad and Delhi are more suitable for transfer stations than Saharanpur.

(11) The North-Western Railway will be more than ever at the mercy of the East Indian Railway with regard to its coal supply from Bengal.

(12) The section proposed to be ceded is one of the most productive sections of the line, and contributes very largely to the general revenues. It is a most advantageously situated section with regard to fuel, and consequently is most economically worked.

(13) It considerably influences the statistics of working the entire line many sections of which barely pay working expenses. It is the healthiest and cheapest part of the line, and the prospect of transfer to the Saharanpur section is at present looked forward to by the men as a means of recruiting their health, after a long residence in such unpopular and expensive stations as Sibi, Hirokh, and other stations in the scorching deserts of Mooltan and Sind.

(14) The passenger traffic of this section is as important as its goods traffic, and in both of them the North-Western Railway has by far the greatest interest.

(15) The section in question is within easy distance of the North-Western Railway Head-quarters at Lahore, and would without doubt receive more supervision from the Chief Officers of that Railway than could possibly be the case if it were added to on the extreme end of a line of nearly 1,100 miles in length.

(16) The line usually earns more than five per cent. on its capital outlay

and it would probably be thought inexpedient in the present state of the finances of India to make over a portion of this surplus to the shareholders of the East Indian Railway Company. As Manager of the North-Western Railway, I should naturally deprecate the Railway being shorn of its most productive section.

(17) Reduced earnings mean a reduction in the advantages offered by the Provident Fund to a large and constantly increasing non-pensionable staff, and the consequent unpopularity and increased expense of working the non-paying sections. All this has a depressing influence upon the staff, who will naturally feel that they are attached to a strategical military railway which can never be expected to pay.

XII. With regard to head *I—Effect upon the trade of the Punjab and Sind, and upon the inter-provincial trade with the North-West Provinces—*

(1) The whole object of the proposal is obviously to allow the East Indian Railway to claim the advantage of their cheap coal, to advance further into the Punjab (to Jullundur, Ludhiana, Patiala, and other stations) and to draw traffic from its natural overlet, Kurrachee, and introduce it to Calcutta.

(2) To obtain a footing there can be no doubt that the East Indian Railway will offer rates to the trade of the Punjab, which will force the North-Western Railway and the Bombay, Baroda and Central India Railway to make similar reductions to the common loss both of the railways and of the Government.

(3) The trade of Kurrachee will thus be seriously crippled, and the impulse which is now given to agriculture in the Punjab and Sind by the advantages offered by the port of Kurrachee will be checked, for the expenses of working the port will be increased as the export trade falls off; and unless there is sufficient export traffic to attract steamers to the port, the traffic which is now beginning to flow inwards through Kurrachee, will also be destroyed.

(4) Lessening the amount of trade from Kurrachee will generally tend to throw back the by no means hopeless aspiration of the Punjab, that it will ere long be three days nearer Europe than at present.

(5) The object of the Government in the extension of railway communication is undoubtedly to increase the prosperity of the districts through which railways pass; the change now proposed will possibly be an advantage to an already rich English Company, but will, I think, be detrimental to the provincial trade of the North-Western Provinces, of the Punjab and of Sind.

(6.) The Punjab Trade Reports show that the average weight of the total Rail-borne trade of the Province during the three years ending 1885-86 was—

Imports . . . . .	8,594,000	Maunds.
Exports . . . . .	20,467,000	do.
Total . . . . .	29,061,000	do.

And that these quantities were principally made up of trade between the following Provinces :—

	Imports.	Exports.	Total.
Bengal and Howrah . . .	13,78,000	8,37,000	22,15,000
North-West and Oudh . . .	34,36,000	37,66,000	72,02,000
Bombay . . . . .	8,47,000	29,68,000	38,15,000
Kurrachee and Sind . . .	25,81,000	1,22,51,000	1,48,32,000
	<u>82,42,000</u>	<u>1,98,22,000</u>	<u>2,80,64,000</u>

With the exception of Kurrachee and Sind, the most important trade of the Punjab is with the North-West Provinces and Oudh; the weight of the imports and exports of that section amounting to 25 per cent. of the total trade of the Punjab and consisting principally of rice, grain, sugar, salt and other coal staples.

(7) On the other hand, the trade with Bengal amounts to barely 8 per cent. of the total Punjab trade; the amount is insignificant, and even of this, one quarter is coal for Railway purposes, and of the remainder a large proportion stops at Delhi. It will also be seen if the imports and exports be taken separately, that the export traffic to Bengal is comparatively unimportant, compared with that of Bombay, Kurrachee, or the North-West Provinces; and to hand over the working of the railway, which is one of the main in-lets of their food supplies, and one of the main out-lets of their export trade to the charge of a railway company which has the very least interest in the development and maintenance of such traffic, would be manifestly detrimental to the interests of the Punjab, the North-West Provinces and Oudh, as well as to those of Bombay and Rajputana.

XIII. In conclusion, I would venture to hope that I have proved that it would be inexpedient to transfer this piece of line to the East Indian Railway on the following grounds:—

It is undesirable in the interests—

Of the Bombay, Baroda and Central India Railway; as it would interpolate, between them and the traffic of the North-Western Provinces, a rival railway which, judging by all past experience of its policy and practice, would effectually strangle all trade with Bombay.

„ „ Districts served by the Oudh and Rohilkhand Railway between Saharanpur and Chandausi; because there would be a constant effort on the part of the East Indian Railway to divert traffic by the longer route in order to serve its own purposes.

„ „ Export trade; because the whole object of the proposal is to divert trade from Bombay and Kurrachee, the ports nearest to Europe, to Calcutta, the port furthest away from Europe, and all this unhealthy interference with direct routes is prejudicial.

„ „ Inter-provincial trade, because the bulk of the Punjab trade is with the North-Western Provinces and not with Bengal, and the proposal would involve all this trade being dealt with by two railways instead of one, which would cause increased delay, increased rates, and increased expenditure.

„ „ General travelling community, because there would be a greater number of changes for 3rd class passengers than at present.

„ „ North-Western Railway, because it would materially increase the amount of the through-booking accounts.

And finally, because there is not, as far as I can see, a single compensating advantage to induce Government to make a handsome present of one-fifth of the surplus profits of the only paying portion of the North-Western Railway to the shareholders of an English Company—a present which would practically come out of the pockets of the Indian tax-payer.

## Enclosures Nos. 2 and 3 to Railway Despatch No. 107 of 1887.

No. 717 W.R., dated 21st March 1887.

From—Colonel A. M. LANG, R.E., Secretary to the Government of the North-Western Provinces and Oudh, Public Works Department,

To—The Secretary to the Government of India, Public Works Department.

I am directed to acknowledge the receipt of your letter No. 224 R.T., dated 5th instant, forwarding, for the opinion of His Honour the Lieutenant-Governor, copies of correspondence having reference to a proposal to make over the working of the Ghaziabad-Saharanpur Section of the North-Western Railway to the East Indian Railway Company.

2. I am to say that in considering this question His Honour has again referred (as suggested in your letter under reply) to Government of India, Public Works Department Confidential letter No. 570 R.C., dated 22nd June 1885, a letter to which he proposes, within a short time, to submit a separate reply. In the meantime the contingency of the Oudh and Rohilkhand Railway being provincialized as a State Railway, gives this Local Government a more direct interest in a question which affects very materially, as Colonel Conway-Gordon has shown, the position and prospects of the Oudh and Rohilkhand Railway; but otherwise the arguments against the East Indian Railway proposals have the same force whether the Oudh and Rohilkhand Railway is purchased or not by Government. These arguments have been very fully and clearly stated by Colonel Conway-Gordon, in whose views His Honour entirely concurs, attaching special importance to the 11th point noted in paragraph X of his letter which stated briefly the strongest argument against the proposals of the East Indian Railway Company.

3. Colonel Conway-Gordon has discussed the question in all its bearings from his own point of view as Manager of the North-Western Railway; but this Government is interested in the question chiefly in respect to—

- (a) the interests of the trade of the Districts traversed or intimately served by the section of line under consideration; and
- (b) the effect which the proposed transfer would have on one of the main railway arteries of these Provinces, the Oudh and Rohilkhand Railway:

and each of these aspects of the question will be considered.

4. (a) The section of line in question traverses an important, rich, part of these Provinces, and is in touch with other adjacent districts whose trade is now conveniently served by it, and is free to seek its natural outlets without undue restrictions. At the southern end of the line it has free choice of outlets to the Doab or Rajputana, to the port of Calcutta by the East Indian Railway, or to that of Bombay by the Rajputana-Malwa system: while to the North, the Punjab or the port of Kurrachee are open to it. This is due to the fact that the North-Western Railway is in this matter a neutral and disinterested Agency, or at any rate in no position to impose a bias on the trade in any particular direction. This state of things, which is beneficial to the general public and to the trade of the country above this section of railway, would be altered if the line fell into the hands of an Agency which cannot be disinterested, and whose interests lie in retaining the traffic on its own line by diverting the course as much as possible in the direction of Calcutta: and *a priori* reasoning as well all experience of the practice and policy of the East Indian Railway, renders it certain that rates, &c., will be so arranged as to give the traffic a

decided bias Calcutta-wards. If for this reason only this Government would be adverse to the proposed measure, and would prefer to leave the trade, as at present, free to use the best trade routes without restrictions. It is impossible to suppose that this freedom, so important to the interest of the public at large, can be secured if the control of this section is transferred into the power of one or other of the great competing lines to Calcutta and Bombay.

5. (b) Again regarding the proposal from the point of view of the interests of the Oudh and Rohilkhand Railway which is essentially a "North-Western Provinces and Oudh" Railway—a main arteriel line traversing these provinces from one end to the other, and serving materially the trade both local and export, it must be remembered that this line has hitherto been under the serious disadvantage of its only outlets being controlled by the East Indian Railway, which has shown a plain disposition to profit by this situation until latterly the expenditure of large sums of money on the Benares Bridge and on its northern extension has released the Oudh and Rohilkhand Railway from the difficulty. It now offers a through route from south to north of these provinces by a line (539 miles shorter and cheaper than the route 577 miles) *via* the East Indian Railway and Ghaziabad, and it has secured an outlet at Saharanpur free of the control of the East Indian Railway. It is therefore now fairly entitled to a full share of the through traffic between Bengal and the Punjab by its shorter route, and it would be manifestly unfair to allow the East Indian Railway to move up northwards and block its new, free northern outlet and to begin again, on fresh ground, a damaging war of competitive rates with the object of driving back and diverting its traffic. From this point of view also, this Government would oppose the proposal of the East Indian Railway, and would wish to see the Ghaziabad to Saharanpur Section left in its present hands; and thus interpolate a neutral zone between the East Indian Railway and the Oudh and Rohilkhand, as regards their northern termini.

6. It has been shown, therefore, that in respect to Provincial interests, the present proposal of the East Indian Railway cannot receive His Honour's support, as it is opposed to the policy which this Government should seek to secure in regard to its railways. The North-Western Provinces and Oudh are now covered with a net-work of railways which serve well its local internal trade, and which for export trade are in touch with numerous other systems offering a choice of outlets to the ports. It should be the object of this Government so to adjust the main railway lines in this large and productive tract, that the trade should be free to choose among various outlets and diverse routes, and that no one of the great trunk systems which rest on the sea, and either touch this tract of country or push their terminal branches well into one area, shall secure monopolies or impose restrictions for its own benefit on the free development of commerce.

7. Apart, however, from the Provincial aspect of the question, I am to add that the summary given in the 15th paragraph of Colonel Conway-Gordon's letter expresses conclusions with which the Lieutenant-Governor altogether concurs.

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No. 2774, dated 29th April 1887.

From—Colonel J. P. STEEL, R.E., Officiating Secretary to the Government of the Punjab, Public Works Department,

To—The Secretary to the Government of India, Public Works Department.

I am directed to acknowledge the receipt of your letter No. 348 R.T., dated the 6th April 1887, forwarding, for the opinion of the Lieutenant-Governor,

copies of certain correspondence relative to a proposal to make over the working of the Ghaziabad-Saharanpur Section of the North-Western Railway to the East Indian Railway Company.

2. In reply, I am directed to say that His Honour concurs generally with Colonel Conway-Gordon's opinions expressed in his letter No. 143 D.G.R., dated 28th January 1887, to the Director General of Railways; and while fully agreeing with the force of the objections raised by Colonel Conway-Gordon, considers that, so far as the interests of this Province are concerned, there do not appear to be any compensating advantages in making over the section of the line referred to, to the management of the East Indian Railway Company.\* Moreover, it would, in Mr. Lyall's opinion, be very undesirable to introduce a length of what would be foreign line, into the through route between Lahore, Delhi and Bombay-Baroda system.

3. For these reasons His Honour, I am to say, very strongly deprecates the carrying into effect of any such proposal.

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No. 106, dated 20th October 1887.

From—The Secretary of State for India,

To—The Government of India.

- Your Excellency's Railway letter, No. 117, dated the 24th June 1887, sets forth certain objections which are entertained by your Government to the construction, by private agency, of a line of railway from a point on the Rajputana-Malwa line near Ajmere, *vid* Sambhar, to Karnal, Umballa, and Kalka, with branches to Delhi and Kaithal.

2. Besides minor objections to the scheme, such as the gauge to be adopted and the probable costliness of the line, with liability to damage from flooding, you urge that the construction of such a railway would be antagonistic to the interests of the existing Rajputana-Malwa and North-Western systems of railways, and that, further, in the event of the share holders being disappointed in the results of traffic, Government would be subject to considerable pressure to grant a guarantee, or purchase the undertaking outright.

3. With reference to these remarks, I would point out that both by public utterances and official communications, by the Secretary of State and otherwise, in this country and in India, the advantages of attracting private enterprise, without direct pecuniary aid from Government, to assist in the construction of Indian railways, have been much dwelt on, and by such means investors have undoubtedly been invited to direct their attention to India as a field for such enterprise. Any *bonâ fide* proposal, therefore, made in response to this appeal calls for the most favourable consideration from Government. I may add that, in the present condition of the Indian railway system, it must inevitably follow that almost every new line in the better peopled districts will lead to competition with some already existing line, but this cannot be regarded as a sufficient justification for standing in the way of opening new means of communication, and I should greatly deprecate interfering with reasonable projects for constructing new lines of railway without State aid, unless upon very strong grounds.

4. I have, therefore, decided that it would not be justifiable to refuse to negotiate in respect to this scheme, and have accordingly addressed a letter,\* copy of which is forwarded herewith for Your Excellency's information, to Mr. T. W. Wood, expressing a willingness on my part to consider any proposals made for the construction of the line

\* Dated 20th August 1887.



on the basis of the terms embodied in the Bengal and North-Western Railway Company's contract.

5. In the event of negotiations with this set of promoters falling through, I shall be prepared to consider the proposals made by Mr. Duff-Bruce for a somewhat similar scheme, and in pursuance of this intention I have caused a communication, copy of which is enclosed, to be addressed to him in reply to his letter to this Office on the same subject, dated the 27th August last, also enclosed.

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No. 1876 P. W., dated 20th August 1887.

From—Sir JOHN E. GORST, Under-Secretary of State for India,

To—T. W. WOOD, Esq.

With reference to the correspondence noted in the margin, I am directed by the Secretary of State for India in Council to inform you that after communication with the Government of India he has decided that negotiations between the Government and the promoters of a line of Railway from some point on the Rajputana line north of Ajmere, *vid* Sambhar to Karnal, Umballa, and Kalka, with branches to Delhi and Kaithal, can only be proceeded with on the basis of the terms embodied in the Bengal and North-Western Railway Company's contract. Viscount Cross would, therefore, be glad to learn whether you and those acting with you in this matter are prepared to continue negotiations on such a basis.

Letters from Mr. T. W. Wood, dated 1st and 10th December 1886.

Letter to Mr. T. W. Wood, dated 3rd February 1887.

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Dated 27th August 1887.

From—WM. DUFF BRUCE, Esq.,

To—The Under-Secretary of State for India.

I am directed to acknowledge receipt of your letter, No. 1234 P. W. of the 16th July, in which you inform me that a somewhat similar project to that submitted with my letter of the 28th June had been put forward by the Directors of the Bombay, Baroda and Central India Railway. You also state that that proposal had been submitted to the Government of India and that, until a reply had been received to the reference, and the views of the Government of India on our proposal were known, the Secretary of State would be unable to come to a decision on the matter.

2. Since the receipt of your letter, we have received from our solicitors in Calcutta a copy of the reply of the Government of India to our application for permission to construct the proposed line. I annex a copy of the letter in which we are informed that the Government of India is not disposed to favour the scheme. No reason is given for this decision, and we are at a loss to understand on what grounds our application fails to commend itself to the Government of India.

3. If the proposal put forward by the Bombay and Baroda Company is considered more favourable on the ground that that Company proposes at once to connect Delhi with Umballa by a direct line, I am directed to intimate that the Company formed for the purpose of constructing the line to Thanesswar, in the Karnal district, will be prepared to extend the line to Umballa instead of stopping at Thanesswar.

4. The proposal to confine the operation of the Company, in the first instance, to a branch line to Thanesswar (which is on the direct line to Umballa) was made under the impression that a through line to Umballa, which is already

connected with Delhi by a State Railway, would not have the support of the Government of India. The recent break on the North-Western Railway between Saharanpur and Umballa has shown the necessity for an alternative route, and, if the objection taken to our scheme is based on the fact that the proposed line was to stop at Thanesswar for the present, the Company will undertake to carry it through to Umballa on the terms already submitted.

5. Should the objection of the Government of India be on other grounds than those above stated, I am desired to assure you that the gentlemen promoting this Company will be prepared to meet the views and wishes of the Secretary of State and the Government of India in every way compatible with the efficient carrying and working out of the proposed line.

6. In your reply to the memorial of the Associated Chambers of Commerce it is stated, that while "the efforts of Government, either direct or through Guaranteed Companies, are necessarily restricted by financial considerations and by the obligation to avoid any step which might lead to additional taxation, the field of private enterprise is unlimited, and I am desired to state that Viscount Cross is most willing to offer all reasonable facilities in his power, on the part of the Government of India, to the free exercise of such an agency." The line from Delhi to Umballa is one which can be carried out by private enterprise. It has every prospect of being financially successful, and it is therefore one which can be brought before the public on its own merits and without any support in the shape of a Government guarantee. That a line into the Karnal district is urgently required is well known, and we have already received most encouraging offers of support from the principal bankers and zemindars in the Delhi and Karnal districts.

7. The Board of Agency of the East Indian Railway recognizes the advantages of the proposed line and the value it would be to them as a feeder, and have intimated their willingness to enter into an agreement to work it, and all that is asked for from Government is permission to construct the line on land to be provided by Government, and the sanction and assistance of the Secretary of State in the settlement of the terms of the working agreement.

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No. 700 R.C., dated 16th July 1887.

From—The Government of India,  
To—Messrs. SANDBERSON & Co.

I am directed to acknowledge the receipt of your letter No. 1427 of the 9th February 1887, and subsequent reminders, making certain proposals on behalf of a syndicate for the construction of a line of railway from Delhi to Thanesswar.

2. In reply, I am to inform you that, after full consideration, the Government of India is not disposed to favour the scheme.

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No. 1694 P. W., dated 14th October 1887.

From—HORACE WALPOLE, Esq., Under-Secretary of State for India,  
To—WM. DUFF-BRUCE, Esq.

I am directed to acknowledge receipt of your letter, dated 27th August 1887, in respect to the proposed construction by private agency of a line of railway between Delhi and Umballa.

With reference to this proposal and to the remarks made in your letter, I am directed to inform you that the proposals referred to in Sir J. Gorst's letter

of the 16th July to your address are still under the consideration of the Secretary of State, and that a further communication will be made to you on the subject at an early date.

No. 148 (Railway), dated 15th December 1887.

From—The Secretary of State for India,

To—The Government of India.

On the 6th December I addressed to you the telegram quoted in the margin,\* regarding the proposed rail-

\* "Negotiations are still in progress for construction of railway between Delhi, Umballa, and Kalka. Promoters ask what gauge required by Government."

† Letters from Mr J. T. Wood, of 14th October and 14th November 1887.

way from Delhi to Umballa and Kalka, and I now forward copy of the correspondence† which has passed with the parties with whom I am negotiating.

2. I also forward an application‡ which has been made by Mr. Duff-Bruce,

‡ Letter from Mr. Duff-Bruce, of 26th October 1887, and enclosures.

Letters, ditto, of 17th and 28th November 1887.

on behalf of other promoters of the same scheme, by whom I am informed that it was submitted to your Government in February last. My answer

was necessarily to the effect that others were in the field.

3. I learn from the Indian papers that you have passed a Resolution inviting parties in India to undertake the construction and working of the line between Umballa, Kalka, and Simla, on terms similar to those on which the Bengal and North-Western Railway Company was established, supplemented by favourable working arrangements with the North-Western State Railway. As you will have learned by my Railway Despatch, No. 106, of 20th October 1887, and by my telegram above mentioned, that a railway which included this section was the subject of negotiations in this country, I presume that you have not come to any arrangements in respect to it; but I shall be glad to know whether any offers were made in answer to your published notice.

4. The lines above mentioned are likewise included in another scheme which has also been proposed for a railway direct from Karachi to Delhi and Umballa. But in this case a guarantee is sought, and for this reason alone, if for no other, it would be impossible to entertain the proposal at the present time.

### Enclosure No. 1.

Dated 14th October 1887.

From—T. W. Wood, Esq., London, E.C.,

To—The Under-Secretary of State for India.

In continuation of my letters of the 29th August and 14th September, I am

Major-General J. S. Trevor,  
R.E., C.S.I.

Lieut.-General C. H. Dickens,  
R.A., C.S.I.

Lieut.-General B. H. Keatinge,  
V.C., C.S.I.

J. Mitchell, Esq.

D. T. Robertson, Esq.

S. J. Wilde, Esq.

now desired by the gentlemen (*vide* margin) on whose behalf I am acting to state that they have taken advantage of the presence in England of Major Bisset, the Agent of the Bombay, Baroda, and Central India Railway Company, to confer with him on the railway scheme which the Secretary of State, in his letter, No. P. W. 1376, of the 20th August, has expressed his readiness to allow them to form a Company to carry out on the same terms as the Bengal and North-Western Railway Company have carried out their system.

2. The scheme, as indicated on the plan attached, consists of a line of

railway to extend the Rajputana-Malwa Railway from a point near Rewari to Umballa and Kalka, through Paniput and Kurnaul, with branches to Delhi and Kaithal, and a further line from near Rewari in a south-westerly direction to the Rajputana-Malwa Railway, near Sambhar Salt Lake—a length, in all, of about 400 miles.

3. From the information obtained from Major Bisset, the promoters of the scheme are satisfied that there is every reason to believe it will prove remunerative if carried out with economy; but prior to putting it before the public it is desirable, in order to ensure success, that more detailed information should be obtained of probable capital cost and probable traffic receipts.

This information Major Bisset has undertaken to collect and send home at the earliest practicable date.

4. In the meanwhile it seems expedient to settle two points, *viz.* :—

(1) Whether the entire scheme should be carried out on the metre gauge, or whether a broad gauge track alone should be laid between Delhi and Paniput, and a mixed tract on from that point to Kalka.

(2) Whether the promoters can look forward to obtaining from the Guaranteed Companies, to which the lines of the proposed scheme will form most valuable feeders, the assistance usually, if not invariably, given by owners of large trunk lines in England and America to undertakings that serve to develop and increase their traffic.

5. A glance at a map of India will show how important, in a military sense, as well as in convenience to the travelling public, it will be to have both broad and metre gauge railway communication at Umballa and Kalka; but the establishment of such communication will involve considerable additional expense, probably not less than 300,000*l.*, beyond that required for a metre gauge alone, exclusive of moveable equipment, and this additional expense could only be incurred with prudence on a clear understanding with the two Guaranteed Companies with whose systems it would be connected as to future working arrangements.

6. These arrangements, the promoters are of opinion, whether the proposed lines are made exclusively on the metre gauge or are partially adapted for broad gauge stock, should be based on the common English practice, that trunk line owners find all the moveable equipment free of charge, and work and manage branch lines on the basis of working their traffic at a fixed percentage, or for the same percentage of gross receipts that they work and manage their own undertakings, either with or without a guarantee from the trunk line of a minimum return on the capital of the branch, according to the requirements of the case in regard to the raising of that capital. I am to add that beyond the capital cost due to provision of additional rolling stock, an arrangement of this kind can always be made in such a manner as not to involve any appreciable charge on the resources of the trunk line, while the additional traffic brought by judiciously projected branches to a trunk line never fails to add to its net revenue. The promoters, who are also the Directors of the Bombay, Baroda and Central India Railway, can speak from practical experience gained in the working of the Cawnpore-Achnera Railway by the Rajputana-Malwa Railway, that the incorporation with the last-named railway of a line that did not earn more than one-third of its average mileage receipts has been productive of advantage, and has been no source of loss to the Rajputana-Malwa Railway.

7. If the Secretary of State is willing to accede, in the exercise of his control, to the lessees of the trunk lines providing moveable equipment free of charge and giving such other assistance in working as is usual in English practice, and is possible without direct loss to themselves, the promoters on the other hand will be willing to accede to a clause being\* put in the Contract between the Secretary of State and the Company to be formed, which will give the Secretary of State the right to demand, whenever the Company shall have paid for two consecutive years  $7\frac{1}{2}$  per cent. to its shareholders, a reduction in the rates for the carriage of salt, coal and food grains carried in full wagon loads, and of third class passengers, to the lowest rates for corresponding distances that may then be in force on any of the three railway systems with which the undertaking of the new Company will be in contact, *viz.*, the East Indian Railway, the North-Western State Railway, and the Rajputana-Malwa Railway.

\* Section 25 of Bengal and North-Western Railway Contract.

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### Enclosure No. 2.

Dated 14th November 1887.

From—T. W. WOOD, Esq., London, E. C.,  
To—The Under-Secretary of State for India.

With reference to my letter, dated 14th October last, I have the honour to forward to you, for the information of the Secretary of State, the following extract from a telegram, dated 11th instant, received from Major Bisset, *viz.* :—

“*India Gazette* advertises Umballa-Kalka Railway for construction by substantial private Company, upon Tarkeshwar terms. Have submitted copy Wood's letter showing this included in concession ;”

and I am desired by the gentlemen on whose behalf I have hitherto addressed you to request that, as the advertisement mentioned in the telegram, as to construction by a substantial private Company of the length of railway from Umballa to Kalka, relates to a part of the project which has been laid before him by me on their behalf, and is now under negotiation, the Secretary of State will take such steps as he deems advisable to prevent interference with these negotiations from outside parties.

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### Enclosure No. 3.

Dated 26th October 1887.

From—WM. DUFF BRUCE, Esq.,  
To—The Under-Secretary of State for India.

I am desired to acknowledge receipt of your letter, No. P. W. 1694, dated 14th October 1887, intimating that the proposals made by the Bombay and Baroda Railway Company are still under the consideration of the Secretary of State, and it is gathered from this communication that, except in the event of their offer to construct the proposed line being negatived, our proposal will not be considered.

2. In reply, I am desired to submit, for the consideration of the Secretary of State, that the terms on which we have offered to construct the line and bring out the Company on the London market, without any guarantee from Government, are practically a new departure in the construction of railways in India, and, if successful in this instance, would in all probability lead to the construction of many branch lines by private enterprise.

3. In my letter of the 28th June last, I stated the terms on which the East Indian Railway would be prepared to work the proposed line when completed; and, in Messrs. Sanderson & Co.'s letter, dated the 29th March (a copy of which accompanied the letter above referred to), it was shown that, at the present rate of working expenses on the East Indian Railway, this arrangement would result in 54·75 per cent. of the gross receipts going to the East Indian Railway and 45·25 per cent. to the Owning Company.

4. The terms proposed are, however, somewhat complicated, and, as the actual amount to be paid by the Owning Company has to be calculated on "the working expenses of the undertaking of the East Indian Railway (including the branches and proposed line)," it follows that it might vary from year to year.

5. It would simplify the settlement of accounts very materially, without making any great difference in the result, if the system now usually adopted in England could be applied in this case. Here it is the almost universal practice for the main trunk lines to work branch lines at 50 per cent. of the gross earnings, *i.e.*, 50 per cent. to the Owning Company, and 50 per cent. to the Working Company.

6. A similar arrangement, if sanctioned for India, would simplify agreements between main and branch lines, and help materially in developing the construction of feeders to the great trunk railways. As matters stand at present, it is very difficult to get any money for railways in India without a Government guarantee. But if it were laid down as a general rule that feeder lines would be worked by the main lines for 50 per cent. of the gross earnings, it would, if the traffic were such as to justify the construction of a line at all (and of this Government and the main line authorities should satisfy themselves before sanctioning the scheme), be practically equivalent to a guarantee that some dividend would be paid to the shareholders, without Government being in any way liable for a fixed rate of interest.

7. It would be impossible for Government to guarantee every branch line that it may be considered desirable to construct, but it is manifestly to the interest of Government, both directly and indirectly, to promote in every way they can the construction of feeders to the trunk lines which they do guarantee.

8. The system of providing such feeders in the manner now proposed has been tried on the Tarkessur branch line in Bengal with marked success, but no line to be worked on this system has as yet been brought out in the London market. If it is to continue, it is evident that the first scheme put forward must be a success, and yield dividends which will tempt capitalists to invest in such railways. The railway from Delhi into the Kurnaul District is in every respect suitable as a pioneer line; it passes through a well-cultivated and populous country, and is therefore a line which is well-adapted to make the experiment on, as it should yield a gross revenue which will ensure to shareholders a handsome return on their money.

9. The system now proposed for working branch lines, as already pointed out, practically amounts to a guarantee, but without any rate being fixed or any liability attaching to Government. But it has also this advantage in its favour,—the dividends the shareholders will receive will be regulated by the rate of interest which a moiety of the gross receipts can pay on the capital invested, and they will therefore have a direct interest in keeping down the original cost, and limiting the capital on which dividends have to be paid. Under the fixed guarantee system it matters little to the shareholders what the line costs.

10. I annex extracts from the working agreements of the South-Western and Bridgewater lines, and the Metropolitan District and Hounslow lines.

Enclosure 1 in No. 3.

Articles of Agreement made the 6th day of December 1882 between the Bridgewater Railway Company (hereinafter called the "Owning Company") and the London and South-Western Railway Company (hereinafter called the "Working Company").

Clause 7. The gross amount of all the tolls, fares, rates, and charges from time to time payable in respect of the railway and the traffic thereon, and received by the Working Company, shall be divided between and belong to the two Companies in the following proportions :—

*First.*—The Working Company shall retain out of such gross amount the Government duty from time to time payable, and such sum or sums as shall be equal to 50 per centum of such gross amount in any half-year after the deduction therefrom of the Government duty.

*Second.*—The Owning Company shall have the balance of such gross amount which shall be paid half-yearly to and belong to them each half-year ending, as the case may be, on the 30th day of June and the 31st day of December.

Enclosure 2 in No. 3.

An Agreement made the 3rd day of June 1880 between the Metropolitan District Railway Company (hereinafter called "the District Company") and the Hounslow and Ealing Railway Company (hereinafter called "the Promoters").

Clause 8. Out of the gross receipts to be derived from the traffic on the railway or any part thereof the District Company shall, after the deduction of passenger duty, retain 50 per centum of such gross receipts, which said 50 per centum shall be in full satisfaction and remuneration for the working, managing, and fully and efficiently maintaining, renewing, and upholding of the railway, and for the performance by the District Company of every other obligation undertaken by them under this Agreement with reference to the railway.

Clause 9. The residue of such gross receipts shall belong to the Hounslow Company, and shall be paid over to that Company by the District Company half-yearly, on the 30th day of June and the 30th day of December respectively, or within six weeks after the expiration of the half-year in which the money shall have been earned.

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Enclosure No. 4.

Dated 17th November 1887.

From—WM. DUFF BRUCE, Esq.,

To—The Under-Secretary of State for India.

In the "Times" of Monday the 12th instant, the following telegram appeared :—

"The Government has at last pronounced a decision on the question of the proposed railway from Umballa to Kalka and Simla. It is not proposed to construct the line as a State Railway, or to offer any guarantee or subsidy to private enterprise. But if any substantial private Company is disposed to embark in the undertaking, the Government will permit the construction on terms similar to those granted to the Tarkessur Railway Company or to the Bengal and North-Western Company."

With reference to this announcement, I am desired to state that, in the event of the Secretary of State granting the concessions asked for in my letters of the 28th June and 27th August last, for the construction of a line from Delhi to Umballa, and approving the terms for working the same proposed in my letter of the 26th October, the Company I represent would be prepared to extend the line from Umballa to Kalka.

As regards the working terms proposed, I am desired to point out that in 1886 the working expenses on all the railways in India amounted to only 47·58 of the gross receipts, while, on the East Indian Railway, they were as low as 34·71 per cent.

The following figures taken from the Administration Report on the Railways in India for 1886-87 show that the working expenses are decreasing year by year :—

	1884.	1885.	1886.
	R	R	R
Gross Receipts . . . . .	15,97,63,266	17,38,05,185	18,58,41,170
Working Expenses . . . . .	8,06,26,463	8,77,01,962	8,84,22,951
Percentage of Working Expenses on Gross Receipts .	50·5	49·04	47·58

The proposal to work branch lines at 50 per cent. of the gross earnings would not therefore involve any additional expense to the State or main lines, while, should the average working expenses continue to decrease, it would become a source of profit; a simple agreement on these terms would greatly facilitate the construction of branch lines, and, as it would not involve any additional expenditure to the State, I am desired to express a hope that the Secretary of State will give his consent to the proposal.

### Enclosure No. 5.

Dated the 28th November 1888.

From—WM. DUFF BRUCE, Esq.

To—The Under-Secretary of State for India.

We have asked for this interview for the purpose of submitting to Your Lordship a proposal for the construction of a railway in India by private enterprise.

2. The Government has from time to time expressed itself as desirous to extend railways in India, so far as its finances will permit, without adding to the taxation of the country, and its willingness to offer all reasonable facilities in its power for the construction of railways through private agency.

3. We have already submitted a scheme to Government for a railway from Delhi to Umballa, for the construction of which we have good reason to believe we can raise private capital without any guarantee of interest, provided the concessions we have applied for are granted.

4. The concessions asked for are :—

(a) That all land shown to the satisfaction of Government to be necessary for the construction of the railway, with stations and other accommodation, shall be provided free of cost.



(b) That Government will accord its assent to an arrangement with the East Indian Railway Company, under which the proposed line will be worked by the East Indian Railway Company on the following terms, *viz.* :—

- (1) The proposed line to be worked by and as part of the “undertaking” of the East Indian Railway.
- (2) A separate account of the gross earnings of the proposed line to be kept, such gross earnings being divided between the East Indian Railway and the Owning Company, in the proportion of 50 per cent. to the Working Company and 50 per cent. to the Owning Company.

5. The Board of Agency of the East Indian Railway Company has expressed its approval of the proposal, and has intimated that, subject to your Lordship’s sanction, it will be prepared to work the line on what are known as Tarkessur terms, which at the current year’s rate of working expenses on that railway would be about 50 per cent. of the gross earnings, or practically the terms which we ask.

6. We understand that a somewhat similar proposal has been put forward by the Directors of the Bombay and Baroda Company, the new line in this case to be worked by either the Bombay and Baroda Company or the North-Western Railway Company, but neither of these lines are in as good a position to work the proposed branch as the East Indian Railway. On the North-Western Railway the working expenses last year were 52·7 per cent. of the gross earnings, and on the Bombay-Baroda 41·12; while on the East Indian the working expenses were only 34·71, and this year will be below 31 per cent.

7. The proposed branch line would, therefore, be more economically worked by the East Indian Railway than by either of the other Companies, and it is under such circumstances better, both in the interest of the State and shareholders, that this line should be worked by that Company.

8. If worked by the Bombay-Baroda Company the line would have to be on the metre gauge, and it is not desirable that a line connecting Delhi and Umballa, and which might be required as the main line of communication between the North-West Frontier and all stations to the south of Delhi, should be on a different gauge from the main trunk lines.

9. On the other hand, if constructed on the broad gauge and worked by the North-Western Railway Company on Tarkessur terms, the Owning Company would only receive about 33 per cent. of the gross earnings, against about 50 per cent. if worked by the East Indian Railway Company.

10. The Government of India has issued a notification offering Tarkessur terms, worked by the North-Western Railway Company, for the construction of a line from Umballa to Kalka. We doubt whether it would be possible to raise the capital on such conditions, but if we obtain the concessions asked for, and the line to Umballa is worked by the East Indian Railway Company, we would be prepared to extend it to Kalka on the same terms.

11. The conditions on which we have offered to construct the line and bring out the Company on the London market without any guarantee from Government are a new departure in the construction of railways in India, and, if successful in this instance, would, in all probability, lead to the construction of many branch lines by private enterprise.

12. We submit the proposal for Your Lordship’s favourable consideration, and will be glad to give any further explanation which Your Lordship may require.

No. 22 (Railway), dated 21st February 1888.

From—The Government of India,

To—The Secretary of State for India.

We have the honour to acknowledge the receipt of Your Lordship's Railway Despatches No. 106, dated 20th October 1887, and No. 148, dated 15th December 1887, regarding the negotiations entered into by Your Lordship with the promoters of a projected line of Railway which, starting from some point on the Rajputana Railway north of Ajmir, is to proceed *vid* Sambhur to Karnal, Umballa and Kalka, with branches to Delhi and Kaithal.

In the first-named of these Despatches, Your Lordship states that, in the event of negotiations with this set of promoters falling through, the proposals made by Mr. Duff Bruce, in a letter of 27th August 1887, for a somewhat similar scheme will be taken into consideration. With the second of the Despatches named, further correspondence with both sets of promoters is forwarded.

2. The principle involved in Despatch No. 106 is so important, that we think it necessary to lay before Your Lordship, at the cost of some recapitulation of past events, the view which we take of it.

3. In a previous Despatch\* Your Lordship had asked for an expression of our opinion on the merits of the first-named Railway project generally, and particularly on the following points:—

i—Whether the route proposed is that which Government would approve on political, commercial, and engineering grounds;

ii—Whether further relief to the Rajputana Railway, between Ajmir and Delhi, is necessary in any shape;

iii—If so, whether any other system of additional lines would be preferable to this one;

and, in paragraphs 4 to 7 of the same Despatch, Your Lordship observed that while any well-devised scheme for the formation of branch or feeder lines would deserve the most careful consideration if “they would increase the traffic of existing lines” besides fulfilling other considerations, yet the present proposal contained terms which would be disadvantageous to the Rajputana-Malwa system, and, therefore, to the finances of the State; and you asked us to examine these proposals and, if necessary, to substitute alternative recommendations.

4. In our Railway letter No. 117, dated 24th June 1887, we replied that we were decidedly opposed to the project. Our answer as to the first point was that we considered that the proposed line was not desirable on commercial grounds, because the traffic, for which it would provide an alternative means of communication between Kishengurh and Umballa, was not greater than could be carried by the existing system; and the interests of the new scheme would, therefore, be directly antagonistic to those of the Rajputana Railway system and of the North-Western Railway.

We objected to it on engineering grounds, because of the liability of the line to damage from floods.

With regard to the second point, at the time our Railway letter No. 117 was written, the capacity of the Rajputana Railway was still under consideration. But since then, in our Despatch No. 202 Railway, dated 31st October 1887, we have explained that we do not think any present measures are necessary to increase its carrying capacity.

\* No. 11 Railway, dated 27th January 1887.

Our reply as to the third point was necessarily that we had no scheme of additional lines to advocate. We anticipated that the result of carrying out a project, so likely to be unremunerative, would probably be that pressure would, at some later time, be laid on the Government to guarantee, or to purchase, the line.

In fine, inasmuch as our reply struck at the root of the proposal and objected to the entire scheme referred for our consideration, we did not think it necessary to discuss in any detail the terms on which the concession might be given.

But we stated that, in any case, if the railway was to be constructed at all, it should be on the standard 5' 6" gauge.

5. The effect of Your Lordship's Despatch of 20th October is to put aside the points referred for our consideration in the Despatch of 27th January, as well as the conclusions we submitted with regard to those points. The question of accepting, or not accepting, the proposal, is made to rest solely on the desirability of attracting private enterprise without a guarantee. With regard to the question of competition, Your Lordship writes : "in the present condition of the Indian Railway system, it must inevitably follow that almost every new line in the better peopled districts will lead to competition with some already existing line, but this cannot be regarded as a sufficient justification for standing in the way of opening new means of communication."

6. We have received with regret the intimation that Your Lordship has overruled our objections, and has decided that the principle of the proposed railway must be conceded. We should feel less regret if any attempt had been made to show that there is a reasonable prospect of such a development of traffic as to employ the new line without any detriment to the existing systems with which it will compete. But Your Lordship apparently accepts our arguments on this head, and yet holds that the competition of a new line with one already existing is no "sufficient justification for standing in the way of opening it." We hardly suppose that it is intended to lay down so broad a proposition as that, in the opinion of Her Majesty's Government, the construction of any railway is to be allowed anywhere in India, however much it may injure the railway receipts of Government, if only the offer is made to construct it without a guarantee. It would, however, be convenient if some general rule as to the extent of prospective injury by competition which should, or should not, be fatal to a new project, were laid down for our guidance in accepting or rejecting such projects in future.

We are strongly impressed with the evil of constructing competitive lines so long as other parts of the country are unprovided with any means of communication whatever ; and we think that, in this respect, the care taken by the Government of France to avoid unnecessarily competing lines, is an example to be followed. In that country, we believe that the different Companies have districts allotted to them, within which they exclusively supply railway communication.

7. In case Your Lordship should overrule the objections which we have felt it our duty to place on record, and continue the negotiations which have been initiated with the promoters of either of these schemes, we consider it necessary now to make further remarks on the details of those schemes.

8. First, with regard to the terms proposed by the Bombay-Baroda Company, in Appendix A of the letter forwarded with Your Lordship's Despatch,

No. 11 Railway, of 27th January 1887, we think it necessary to take exception to some of these terms :—

- (1)—The objectionable character of the condition lettered F is pointed out in the following extract from a letter from the Director of the North-Western Railway, No. 252 D. G. R., dated 22nd April 1887 :—

6. Attention should be given to the proposed modification in the Bengal and North-Western Railway contract lettered F, which obliges Government to take over the line on a basis of the net dividends of only two years. If the modification be accepted, there will be even more advantage to the Company to refrain from all repairs and renewals for the last two years, and to hand over to Government a depreciated line, at a higher cost because depreciated, as there was in the case of the Eastern Bengal Railway Company; and Government is well aware of what took place in that case.

We would deprecate strongly any reduction of the period (five years), the dividends during which were adopted in the Bengal and North-Western Railway contract as the basis of the calculation of the purchase price.

- (2)—The prior right to make all extensions, conferred by M., would be, in our opinion, a dangerous monopoly to confer on any Company and might be highly detrimental to the interests of the State and of the country.
- (3)—With regard to the clause on participation in profits, we suggest that the shareholders should be content with 4 per cent., and that the surplus over this should be divided between the Owning Company and the Rajputana-Malwa Railway in the manner proposed. This procedure follows the arrangement made with the Bombay, Baroda and Central India Railway Company for working the Cawnpore-Achnera Railway.
- (4)—Under J., the Rajputana-Malwa line (*i.e.*, the working Company) would receive no remuneration for working the new Railway until the shareholders have received their 5 (or 4) per cent. We suggest that 5 per cent. on the gross receipts should in the first place be set aside as remuneration to the working line, before interest is paid on capital.
- (5)—The clause about the Kalka-Simla Tonga Service would have to be examined by the Post Office Department before its terms can be finally settled.
- (6)—The conditions lettered H (a) and L (h), and possibly other clauses, will require careful consideration before any contract is finally entered into. The last named condition is not very clearly worded; but in the present state of the negotiations we have not thought it necessary to go into a minute examination of these details.
- (7)—The Secretary of State should be empowered to fix the proportion of capital which should be raised by debentures, and the maximum rate of interest to be paid upon them. No provision appears to have been contemplated in the draft submitted to meet these points; and in the absence of such a provision it might pay the Company, even at a considerable loss of share capital, to relinquish the undertaking under clause F, as the Debentures thereby become Government liabilities.
- (8)—Lastly, should Your Lordship eventually decide to adopt any of the schemes now under discussion, we would urge that with the view

of preventing improper competition between the new line and others, whether State, guaranteed, or private, the acceptance by the Company of the principles, and maximum and minimum rates, laid down in our Public Works Resolution No. 1446 R.T., dated 12th December 1887, copies of which were sent to Your Lordship with our Despatch No. 4 R., dated 10th January 1888, may be insisted on, and a clause to this effect inserted in the contract.

9. Next as to the question of gauge. We think it is quite clear that the line from Kalka to Umballa, by which troops are to be brought down from the hills and forwarded to their destination by the North-Western Railway, must be on the same gauge as that Railway, *i.e.*, the broad gauge. Also that the communication between Delhi and Umballa *via* Karnal should be on the broad gauge, not only for the reason mentioned in paragraph 4 of our Despatch No. 117 Ry. of June 24, 1887, but also because it may prove a useful alternative line for through traffic, and for military requirements in the event of the North-Western line *via* Saharanpur being breached by floods as has frequently been the case. But the proposed extension from Paniput to near Ajmir might be on the metre gauge, as it would join on to and feed the metre gauge line of the Rajputana-Malwa system.

10. The Bombay-Baroda Company's original proposal was apparently to construct the whole of the extension on the metre gauge; but from the correspondence forwarded with Despatch No. 148 it appears that they are now ready, under certain conditions, to meet the views of Government so far as to have a mixed gauge from Delhi to Kalka, with a metre-gauge line from Paniput to near Ajmir, and to Kaithal.

This modification seems to us to go too far. A broad gauge line would suffice to carry all the traffic that is likely to offer itself between Kalka to Delhi, and the addition of a mixed gauge would only load the scheme with unnecessary expenditure.

11. This being so, it remains to consider how, if the Bombay-Baroda Company agree to construct a broad gauge line between Delhi and Kalka, they would arrange for its working. Their scheme appears to be dependent on the making of suitable arrangements for borrowing rolling-stock from the East Indian Railway, or the North-Western Railway, or both. But as both of these would be competing lines, the one aiming at carrying the traffic from the Delhi-Umballa District to Calcutta and the other to Karachi, while the Bombay-Baroda Company's object is to carry it to Bombay, we think the probability of effecting amicable arrangements between Companies having such opposed interests, to be highly problematical.

12. These remarks lead us to the consideration of the rival project which is now before Your Lordship, promoted by Mr. Duff Bruce and others. This project has, in our opinion, much more to commend it than that of the Bombay-Baroda Company. It confines itself to the construction of a line between Delhi and Kalka, part of which (that from Delhi *via* Karnal to Umballa) we consider to be useful, and part (from Umballa to Kalka) indispensable: it proposes to make it on the broad gauge; it requires no guarantee; and it is based on arrangements with the East Indian Railway Company in regard to a working agreement, the terms of which, so far as they can be gathered from the correspondence, appear to us to be very suitable and likely to be popular in the money market.

On these grounds we are of opinion that of the two schemes put forward,

that proposed by Mr. Duff Bruce is preferable, and should be accepted rather than the other. But at the same time we may suggest that a solution of the question, still more advantageous to the State, would be arrived at if the line from Kalka to Delhi were made by the capitalists whom Mr. Duff Bruce represents, and worked by the North-Western Railway on the same terms as those proposed by the East Indian Railway, *i.e.*, that the shareholders should receive 50 per cent. of gross receipts. In this way the competition and inconvenience would be avoided, which will probably ensue if two rival administrations work the same District.

13. As to priority of application, we would merely remark that up to the present time the promoters of the Rajputana Railway scheme have not, so far as we are aware, put forward any proposal for a broad gauge line, without the addition of a metre gauge, between Kalka and Delhi, but on this point Your Lordship will be in a better position than we are, to judge of the relative claims of the two sets of promoters.

14. In reply to the enquiry made in paragraph 3 of Your Lordship's Despatch of 15th December, we have to report that until after this Despatch had been sent to Press no offer had been made in answer to our published Resolution inviting applications for the construction and working of a line between Umballa, Kalka and Simla. We have since, however, on the 16th February, received an offer for constructing the section between Umballa and Kalka. This is now under consideration, and will be communicated to Your Lordship in due course.

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Telegram dated 5th June 1888.

From—The Secretary of State,  
To—The Viceroy.

Delhi-Amballa-Kalka Railway. Working agreement with East Indian Railway considered preferable to that proposed with North-Western Railway which does not commend itself to me. I propose accordingly to negotiate with East Indian Railway Company.

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No. 70 (Railway), dated 15th June 1888.

From—The Government of India,  
To—The Secretary of State for India.

With reference to Your Lordship's telegram, dated the 5th June, and to our

"Your telegram in the Public Works Department, dated 5th June last, Delhi-Kalka Railway. We see grave objections to working agreement with East Indian Railway Company, on account of competition at Umballa, see our Railway Despatch No. 107 of 3rd June 1887, and telegram of 4th June last, about working Oudh and Rohilkhand Railway. We attach so much importance to this, that we should prefer the abandonment of the project to working agreement with East Indian Railway Company."

telegram, dated the 9th June 1888, quoted in the margin, we desire to invite Your Lordship's attention to our Railway Despatch No. 22, dated the 21st February 1888, in which, when discussing the projected railway between Delhi and Umballa, we recommended that the working of the line should be entrusted

to the North-Western Railway, in order to avoid "the competition and inconvenience which will probably ensue if two rival administrations work the same district."

2. We are still strongly of opinion that this would be the best course. We consider that the North-Western Railway could work this section of line, without any loss to that administration, at 50 per cent. of the gross receipts. For

the reasons set forth in our Railway Despatch No. 107, dated 3rd June 1887, we consider it inexpedient to allow the East Indian Railway Company access to Umballa, because such a course would tend to encourage undue competition for traffic, and would add to the power which is already in the hands of that Company.

3. In our Despatch\* regarding the future of the Oudh and Rohilkhand Rail-

\* No. 64 Railway, dated 8th June 1888.

way, we have dwelt, at some length, upon the inconvenience which would attend the transfer of that Undertaking to the East Indian Railway Company. We venture to hope that the recommendations which we have there made will have due weight with Your Lordship, and that the whole of the railway system in the districts of Saharunpur and Umballa may be, for the present, reserved in the hands of Government and that the finances of India may be saved from the effects of a ruinous Railway competition which will, without doubt, ensue if the line from Umballa to Delhi is handed over to a private Company.

4. We would add that much of the advantage which we expect from the sanction just received from Your Lordship for working the Oudh and Rohilkhand Railway as a State line, will be lost if the system worked by the East Indian Railway Company is extended to Umballa.

No. 67 (Railway), dated 21st June 1888.

From—The Secretary of State for India,

To—The Government of India.

The telegrams noted in the margin\* have passed between Your Excellency

\* Telegram to Viceroy, 24th April 1888.

"Delhi-Kalka Railway. Before opening negotiations with promoters of standard gauge line, please furnish evidence to show that 50 per cent. of gross receipts will cover working and maintenance, in view of special danger from floods between Karnal and Umballa."

Telegram from Viceroy, 1st May 1888.

"Your telegram of 24th April. Delhi-Kalka Railway. East Indian Railway proposed working and maintenance at 50 per cent. gross receipts. I assume that as much can be accomplished by North-Western Railway with profit. Working and maintenance of branch lines always less than main line, and profit accrues to main line from traffic of branch."

Telegram to Viceroy, 5th June 1888.

"Delhi-Umballa-Kalka Railway. A working agreement with East Indian Railway considered preferable to that proposed with North-Western Railway, which does not commend itself to me. Propose accordingly to negotiate with East Indian Railway Company."

Telegram from Viceroy, 9th June 1888.

"Your telegram in Public Works Department, 5th June 1888. Delhi-Kalka Railway. We see grave objections to working agreement with East Indian Railway Company on account of competition at Umballa. See our Railway Despatch, No. 107, of 3rd June 1887, and telegram of 4th June last, about working Oudh and Rohilkhand Railway. We attach so much importance to this, that we should prefer the abandonment of the project to working agreement with East Indian Railway Company."

and myself on the subject of the Delhi-Umballa-Kalka Railway.

2. I regret that before the receipt of the last telegram, in which objection is expressed to the line in question being worked by the East Indian Railway Company, I had caused communications to be made to the promoters of the Railway and to the East Indian Railway Board expressing my readiness to sanction an agreement for the management and maintenance of the line at a rate not exceeding 50 per cent. of the gross receipts. Upon the receipt, however, of that telegram, although retaining the opinion that the arrangement was, upon the whole, desirable and advantageous, I suspended my final judgment on the matter, and reconsidered the question in Council.

3. Your chief objection to the arrangement is, I perceive, founded on the ground of competition at Umballa. I cannot but think that any apprehension on this score is in a great measure groundless. The East Indian Railway

is a State line, and is worked by a Company under the complete control of the Government, and any undue competition may be prevented by proper regulations and a fair settlement of rates. Care will be taken in any agreement with the new Company that provision is made for continuing this control over any Company to which the working of the line may be entrusted. But, even should the various railway administrations whose lines meet at Delhi compete with each other in striving to promote traffic by their respective routes between the North-West Provinces and the several ports of Calcutta, Bombay, and Karachi, I do not perceive that the working of the Delhi and Umballa line by the East Indian Railway Company places other Railways at a disadvantage in a way that would be inconsistent with the public interests. In your letter of the 3rd June 1887, to which you refer, your Government objected to the proposed transfer of the section between Delhi and Saharunpur to the East Indian Railway Company, on the ground that "neither the public convenience nor the interests of the local or export traffic" demanded it. The importance of keeping the Oudh and Rohilkhand Railway under a separate administration, and its main outlets free from the control of any one agency, was also one of the objects you had in view. Changes have taken place since this was written, and, by deciding to place the Oudh and Rohilkhand Railway for a time under State management, your Government will, on the one side, command the direct traffic from Umballa, *viâ* Saharunpur and Benares to Calcutta, and, on the other, *viâ* Lahore and the Indus Valley, to Karachi.

4. The East Indian Railway Board have, as you will see from their enclosed reply\* to the letter addressed to them,

\* Dated 15th June 1888.

offered to manage and maintain the railway at 48 per cent. of the gross earnings, and they can afford to do so, having regard to the economical way in which their own system is worked. Any profits that may be realized from the arrangement will be divided in the proportion of four-fifths to the Government and one-fifth to the Company, so that, from a pecuniary point of view, the Government will probably profit more than if the management were given over to the North-Western Railway administration.

5. Under all the circumstances of the case, and being very desirous of encouraging the promotion of railways through private enterprise, I felt that the proposals which had been made to the East Indian Railway Company and to the promoters of the Delhi-Kalka Railway could not be withdrawn. I was aware, also, that your Government attached considerable importance to the early construction of at least one section of the line. I trust, therefore, that you will agree with me, that the arrangement with which I have thought it necessary to proceed is one that is free from the objections to which you considered it was open.

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### ENCLOSURE.

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No. 80, dated 15th June 1888.

From—A. P. DUNSTAN, Esq., Secretary, East Indian Railway Company,

To—The Under-Secretary of State for India.

I am instructed to acknowledge the receipt of Sir John E. Gorst's letter of the 13th June, stating with reference to his letter of the 6th instant, on the subject of the proposed railway from Delhi to Umballa and Kalka, that he is directed by the Secretary of State for India in Council to inform the Board that



in consequence of a telegram received from the Viceroy within the last few days, Viscount Cross is unable to proceed with any negotiations for the working of the proposed new line until the views of the Government of India shall have received further consideration.

In reply, I am instructed to say that the Board had previously fully considered the subject, and had agreed to the draft of a letter to the Secretary of State in the following terms :—

"I am instructed by the Board of Directors to acknowledge the receipt of Sir John E. Gorst's letter, No. 926 P. W. of the 6th instant, with reference to the working of the proposed line from Delhi to Kalka, and to state, in reply, that the Board will be prepared to work the proposed line upon the terms of 48 per cent. of its gross receipts. In putting forward these terms the Board rely upon, (1) the duration of the agreement being for the term of the present contract; (2) the line being constructed to the satisfaction of the Company, the standard of the line being such that it may be worked with the stock of this Company so as not to require special or undue maintenance; (3) the Company not being responsible in the case of any accident or damage caused by the failure of way or works due to defective construction or extraordinary casualty; (4) the charge for maintenance for twelve months after the opening of the line throughout being borne by the new Company."

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No. 86 (Railway), dated 10th August 1888.

From—The Government of India,

To—The Secretary of State for India.

In continuation of our telegram of the 30th July quoted in the margin, we

"Your telegram in the Public Works Department, dated 24th July last,

If not too late, we should prefer abandon Delhi-Umballa-Kalka project, and construct Unballa Kalka Section as State Railway

Remainder not indispensable."

may, in the first place, bring to Your Lordship's notice that although Your Lordship, in your telegram of the 5th June, informed us that you proposed negotiating with the East Indian Railway Company as to the working of the projected Delhi-Umballa-Kalka Railway, and apparently invited an expression of our opinion as to the advisability of taking this

course, Your Lordship informs us in your Railway Despatch No. 67, dated 21st June, that before the receipt of our telegram despatched only four days later, strongly objecting to the proposed arrangements, your Lordship had already communicated to the East Indian Railway Board your readiness to sanction an agreement for the management and the maintenance of the line.

2. We regard the decision arrived at by Your Lordship as likely to be so disadvantageous to the finances of this country that we should prefer, as stated in our telegram of the 30th July, the alternative of abandoning the project altogether; constructing the line between Umballa and Kalka, the only section we deem of any pressing importance, as a State Railway.

3. The extension of the East Indian Railway to Umballa will enable that Company to exercise too great an influence on the rate of grain and seeds to the sea-board, and will in all probability revive the whole question of competitive rates to Bombay and Calcutta, which was settled with so much difficulty in the year 1883. The working of the Umballa-Delhi line by the Company will inevitably induce a war of rates between the East Indian Railway and the competing State lines; and whatever the outcome of this competition may be, there can be no question that it will result in a considerable reduction in the railway revenue of Government.

4. The working of this section by the East Indian Railway will not conduce to economy; for it may safely be predicted that the railway on which any traffic originates will despatch such traffic by its own route. Thus, the East Indian Railway will despatch all traffic from Calcutta and other stations on its line to stations above Umballa *via* Delhi and Thanessar; while the North-Western Railway will as surely book all traffic for stations on the East Indian Railway below Mogul Sarai by the Oudh and Rohilkhand Railway *via* Saharanpur and Mogul Sarai; the result being that each line will have to haul its wagons back empty, and the number of trains required to carry the traffic will be unnecessarily increased.

5. We gather that Your Lordship's objection to the working of the line by the North-Western Railway lies in the belief that it would be impossible for that Railway to work the Delhi-Umballa-Kalka line at 48 per cent. of the gross earnings. On this point we would invite Your Lordship's attention to the fact that in the first half of 1886 the whole of the North-Western Railway, traversing as it does a large tract of comparatively barren country, was worked at a percentage of 49 per cent.; and although the working expenses of the line have recently risen in consequence of the falling-off in traffic receipts, and the opening of new and at present unproductive sections the traffic on which is yet undeveloped, we have no doubt that the North-Western Railway could work the line from Delhi to Kalka at a profit at any percentage which the East Indian Railway Company might be willing to accept.

6. In the present state of our finances, and with the comparatively limited funds at our disposal to develop the material resources of India, we deem it of the last importance to avoid the construction of purely competitive lines of railway; and we are of opinion that such competition cannot be avoided if rival railway administrations are allowed to work nearly parallel lines between the same two points. We therefore desire to place on record our strong objections to the proposed Delhi-Umballa-Kalka Railway being worked by the East Indian Railway Company, and generally to any arrangements under which that Railway Company would be permitted to work a railway in direct competition with another line already open.

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Telegram No. 78 R. C., dated 24th August 1888.

From—The Viceroy,

To—The Secretary of State.

Your telegram in the Public Works Department, dated 15th August 1888. Delhi-Kalka Railway. A despatch has been posted by Mail of 10th August 1888 recording our strong objections to proposal for working by East Indian Railway. If too late for withdrawal, we strongly recommend that working agreement should be at any rate limited to five years or less if possible.

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No. 105 (Railway), dated 30th August 1888.

From—The Secretary of State for India,

To—The Government of India.

\* Telegram to Viceroy, dated  
24th July 1888.

"Yours, 17th. Negotiations gone too far to recede. Contract will be carefully considered."

Your Excellency will have learnt by my telegrams marginally quoted\* that the arrangements with the promoters of the Delhi, Umballa, and Kalka Railway had proceeded too far for Government to with-

*Telegram to Viceroy, dated  
16th August 1888.*

"Yours, 30th July.  
Arrangements with promoters of Delhi-Umballa-Kalka Railway practically completed and cannot be renounced."

draw from the negotiations, as suggested by your messages of the 17th and 30th July 1888.

2. I much regret that, in this matter, I should have found myself unable to act in accordance with the views of Your Excellency's Government.

3. When the first of your messages was received the terms to be embodied in a contract had already been definitely arrived at with both the promoters and the East Indian Railway Company, and the contract itself was in course of preparation, so that any withdrawal at such a time would certainly have laid Government open to a claim for compensation. I had therefore no choice but to allow the matter to proceed.

4. While fully recognizing the weight to be attached to the opinions of Your Excellency's Government, I could not avoid coming to the conclusion that it would not be justifiable to put a stop to an undertaking, for which the necessary funds were to be found by the public without any direct financial State aid, on the ground that I was unable to approve the agency by which you wished it to be worked, while at the same time another agency, which appeared to me likely to perform the work with efficiency and economy, was available. With regard to the apprehensions which you express lest there should be a want of sufficient control over the rates to be charged by the East Indian Railway Company, I may point out that the same control which is now exercised by the State over that Company's line, and which, I am advised, is found to be sufficient for all practical purposes, will continue to be exercised in respect of the working of the new line, and that care will of course be taken to insert an "undue preference" clause in the contract.

5. It appeared to me, therefore, that, due regard being had to the general interests of the country, it was impossible for me to refuse my consent to the arrangement as now finally settled. Your Excellency's Government shall in due course be furnished with copies of all correspondence leading up to the contract, together with copies of the contract itself.

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No. 114 (Railway), dated 18th October 1888.

From—The Secretary of State for India,  
To—The Government of India.

I have had under my consideration in Council your letter No. 86 Railway, dated the 10th August, recording your objections to the arrangement which has been made for working the proposed Delhi-Amballa-Kalka Railway by the East Indian Railway.

2. Having already, in my despatches and telegrams noted in the margin, explained briefly the grounds upon which that arrangement was considered to be desirable, and informed you that it was too late to recede from it, I should not have deemed it necessary again to address Your Excellency on the subject, if the objections now advanced had not been made to rest principally on financial considerations. You regard the decision which has been arrived at as likely to be "so disadvantageous to the finances of the country" that you would prefer "the alternative of abandoning the project altogether; constructing the line between Amballa and Kalka, the only section" you deem "of pressing importance as a State Railway."

Railway Despatches, Nos.  
67 and 105, of 21st June and  
30th August 1888.  
Telegrams of 24th April,  
5th June, 24th July, and 15th  
August 1888.

3. These views are so much at variance with the conclusions at which I have arrived, that it becomes incumbent on me to explain more fully the grounds of the difference.

4. I must, in the first place, again remind Your Excellency that the line in question will be made without any guarantee from Government, and without any further assistance from the State than the grant of land and that involved in the security of its working charges being limited to 50 per cent. of its gross receipts. A railway, valuable alike for commercial and strategical purposes will thus be constructed through districts at present destitute of such a communication, on terms which are in accordance with the expressed wishes of successive Governments, and of my own declared opinion, that every reasonable encouragement should be given to attract private enterprise to works of public utility in India. Having decided, with your concurrence, that the line was desirable, and that it should be committed to the proposed Company, it would have been quite inconsistent with this policy and a great discouragement to further enterprises of the same kind if the project had been abandoned because the agency of one neighbouring railway administration to work the line had been selected instead of another.

5. I do not think that I am misconstruing the views of your Government on the subject when I understand your chief, if not your only, reason for suggesting such a course to be, that the working of the line should have been committed to the North-West Railway Administration and not to the East Indian Railway Company. I have already, in my Despatch No. 105 Railway, of the 30th August last, referred to the opinions expressed by your Government on this point, but, as it furnishes the cause of your apprehension that there will be a considerable reduction in the railway revenue of the Government, I am desirous of explaining more fully than I have hitherto done why I have come to the conclusion that the arrangement in question will be free from the disadvantages you anticipate.

6. It is contended in your letter that "the extension of the East Indian Railway to Amballa," *i.e.*, the working of the new line from Delhi to Amballa by the Company, will enable it "to exercise too great an influence on the rate of grain and seeds to the seaboard," and will revive the question of competitive rates to Bombay and Calcutta which was settled in 1883; that it "will inevitably induce a war of rates between the East Indian and the compelling State lines," and that this competition will result in a considerable reduction in the railway revenue of Government. It is natural that your Government should view with jealousy any arrangement which, in your opinion, could produce these effects, but I am unable to perceive how they can be brought about by the course which has been decided on.

7. It seems to me that any undue influence which could be exercised by a Company or Administration in regard to rates would be checked by the rules which you have laid down for the regulation of rates and the conduct of traffic. In giving your sanction to a scale of charges between a maximum and a minimum, the object was to keep competition within proper limits, and at the same time to leave the Companies free to meet unavoidable competition in a legitimate way. I understand that the charges on the Bombay and Baroda and the Rajputana-Malwa Railways have not reached the minimum which has been fixed, and that their rates are 30 per cent. in excess of those on the East Indian Railway from Delhi to Calcutta. Under these circumstances, the question of competitive rates cannot be regarded as settled, for it is not improbable

that those on the Bombay line will eventually be lowered. It would appear by their letter of the 6th July last,

- \* Letter to Mr. T. W. Wood, of 11th January 1888.
- Ditto from ditto, of 20th January 1888.
- Ditto to ditto, of 29th February 1888.
- Ditto from ditto, of 22nd March 1888.
- Ditto to ditto, of 25th April 1888.
- Ditto from ditto, of 11th May 1888.
- Ditto to ditto, of 6th June 1888.
- Ditto from ditto, of 6th July 1888.
- Ditto to ditto, of 25th July 1888.

herewith forwarded with correspondence,\* that the Directors of the Bombay and Baroda Railway Company quite expect that contingency. When it happens, the public would benefit, trade would

be stimulated, and traffic would increase, the result being an augmented revenue. But whether this be so or not, the condition of things would not be changed by the substitution of the North-West for the East Indian agency to work the Delhi-Amballa line. The case would no doubt have been different if the scheme of the Bombay and Baroda Railway Company had been sanctioned, for they would then have been placed in a stronger position than they are now to compete with the lines to Calcutta.

8. So far as competition between Calcutta and Bombay is concerned, the rates will thus be regulated and governed, and I do not understand why there should be "a war of rates" which you contemplate "between the East Indian and the competing State lines," by which I presume are meant the Oude and Rohilkbund and the North-West Railways. But, should any such hostile spirit arise, it again would be checked by the existence of minimum rates and by the provisions which have been made against undue preference.

9. As regards the argument in the 4th paragraph of your letter, to the effect that traffic started on one particular line will be taken by its own route, and that, therefore, the working of the Delhi and Amballa Railway by the East Indian will not conduce to economy, because each of the competitive lines will have to haul its wagons back empty, it must be borne in mind that the consignor has full power, where one or more lines are concerned, to elect by which route his merchandise shall be sent, and the passenger to choose the lines by which he shall travel, and that, in the absence of an equality of charges or a break of gauge, the shorter distance and the lower charge will surely in the end determine the matter. I gather from your remarks that it has been arranged either that the Oude and Rohilkhand Railway system will be extended beyond Amballa to Lahore, or that it will be worked in connexion with the North-West Railway for the long traffic to and from Calcutta. Empty wagons which have to be returned from places south of Benares or north of Amballa will naturally be sent to the lines to which they belong, but I fail to see why the working of the Delhi-Amballa line by the East Indian Railway Company should increase any waste produced by the disproportion of up and down traffic between Amballa and Calcutta, and I cannot think that either management will be so ill-advised as wantonly to provoke the unnecessary haulage of empty vehicles.

10. With reference to the observations contained in paragraph 5 of your letter regarding the relative cost of working the North-West and the East Indian Railways, I would remark that whatever may be the capacity of the North-West to work at a cheap rate, and this has not yet been established, it cannot be doubted, especially after your statements with regard to the Patna-Gya Branch, that the East Indian are able, with their larger traffic and better opportunities of obtaining cheap fuel, to carry on the traffic of the new line at a much lower rate. The profits will consequently be larger; and as two out of the fifty per cent. charged for working go directly to the Government, as well as four-fifths of the remainder, the results will be more advantageous to the State in a pecuniary sense.

11. But, in considering the question of railway extension, the chief object to be kept in view is the general benefit of the country. In attempting to attain it interests will sometimes necessarily clash, but this, as I observed in my Railway Despatch No. 106, of the 20th October 1887, "cannot be regarded as a sufficient justification for standing in the way of opening new means of communication." In the concluding paragraph of your letter under reply, you express a strong opinion on the importance of avoiding the construction of "purely competitive lines of railway and of allowing rival railway administrations to work nearly parallel lines between the same two points." I am not sure of the exact meaning which you attach to the expression "purely competitive," but I willingly acknowledge that lines projected for the simple object of drawing the traffic from an existing line, without serving any new district or fulfilling any further purpose, would be an unwise waste of money, and should not be sanctioned. I cannot, however, regard the Delhi-Amballa-Kalka scheme as in this category. This is a line which is intended to open up a new district, both very populous, highly cultivated, and productive, and which will, moreover, form a valuable alternative communication between important places; and it would have been unreasonable, because a State line happened to exist many miles away from it and on the other side of a broad river, if approval to its construction had been refused to those who were ready to raise the capital, and to make it. As to its being worked by a rival administration, you will have gathered from my remarks that I do not share your apprehensions of the effects which this arrangement will produce. On the contrary, I am, after further consideration, confirmed in the opinion that with the checks against unreasonable competition and undue preference already provided, better results may be expected and more extended advantages secured than if one administration had the monopoly of management over both lines.

12. In your telegram of the 15th August, you recommend that the working agreement should be limited to five years, or even less, if possible. But such a limit would not have afforded a sufficient inducement to subscribers, and any attempt to reduce the original terms which had been agreed to would have had the effect of shaking confidence in the *bond fides* of the Government.

13. It seems unnecessary to pursue this discussion further. I have now made your Government fully acquainted with the grounds upon which I felt it necessary to adhere to my decision in this matter, and I trust and believe that the results will be such as to remove your apprehensions and to give general satisfaction.

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No. 2595 P. W, dated 11th January 1888.

From—J. A. GODLEY, Esq., Under-Secretary of State for India,

To—T. W. WOOD, Esq.

With reference to your letters, dated 14th October and 14th November 1887, in respect to the formation of a Company to construct a line of railway from a point near Rewari to Umballa and Kalka, through Paniput and Kurnal, with branches to Delhi and Kaithal, I am desired now to state, for the information of yourself and those acting with you, that the Government of India is of opinion that this railway, if constructed, should be on the 5 ft. 6 in. gauge. That Government, moreover, is in favour of the line starting from some point near Ajmere.

In view of this expression of the opinion of the Government of India, Viscount Cross, before adopting any decision on the points in question, would be glad to receive from the promoters of the projected lines of railway any further observations they may desire to offer.

Dated 20th January 1888.

From—T. W. WOOD, Esq.,

To—The Under-Secretary of State for India.

I have the honour to acknowledge the receipt of Mr. Godley's letter, P. W. No. 2595, dated 11th instant, which I have laid before the promoters of the proposed Company, who learn from it that the Government of India is of opinion that the projected railway should be on the 5 ft. 6 in. gauge, and that it should start from some point near Ajmere.

2. I am now desired to inform you that the adoption of the broad gauge for the scheme throughout would injure its remunerative character, and make it less suitable for unaided private enterprise.

3. A railway to be built without Government support can only be made attractive to private investors by the capital cost being kept low, and by securing cheap management through working arrangements with other neighbouring lines. These essential features would be lost by the adoption of the broad gauge for the complete scheme.

4. The promoters have adopted a mixed track for part of the line, although it involves an additional capital outlay of about 250,000*l.*, in the hope that the East Indian Railway Company would work the broad gauge on exceptionally favourable terms. If disappointed in this hope, the projected line would have if built, to be on the metre gauge; but even on that gauge it could not be carried out with profit to investors unless cordially and liberally aided by the Rajputana-Malwa Railway, whose proprietors and lessees would derive great pecuniary benefit from its construction. Of course this aid could not be given by the Rajputana-Malwa Railway to the same extent if the two railways were on different gauges.

5. If, however, the Secretary of State is of opinion, for Imperial reasons, that the gauge adopted for the entire scheme should be the standard 5 ft. 6 in. gauge, I am desired to say that the promoters will be prepared to take steps to form a Company to carry out the Secretary of State's wishes on receiving his assurance that the capital necessary will be guaranteed by him on Southern Mahratta Railway terms.

No. 176 P. W., dated 25th February 1888.

From—J. A. GODLEY, Esq., Under-Secretary of State for India,

To—T. W. WOOD, Esq.

I am directed to acknowledge the receipt of your letter dated 20th January 1888, in respect to the conditions on which you and those acting with you are prepared to proceed with the formation of a Company to construct and work a line of railway between Ajmere, Umballa, and Kalka, *via* Delhi.

The promoters of the Company state that they are unable to meet the views of the Government of India in respect to the adoption of the broad gauge, except on "Southern Mahratta Railway" terms.

In reply, I am desired to inform you that the Secretary of State must adhere to the terms on which, by Sir J. Gorst's letter of the 20th August 1887, he expressed his readiness to proceed with negotiations for the scheme in question, but that if a guarantee in any shape is required he must consider the negotiations at an end.

Dated 22nd March 1888.

From—T. W. WOOD, Esq.,

To—The Under-Secretary of State for India.

Since the receipt of your letter No. P. W. 176, of the 29th ultimo, on the subject of the proposed railway to be built on the terms granted to the Bengal and North-Western Railway, from the Rajputana-Malwa Railway at Phalera and Delhi to Kalka, with a branch from Karnal to Kaithul, the gentlemen on whose behalf I am writing have been in communication with several prominent capitalists in the city of London, and have been advised by them that it is not possible, while the future prospects of the Bengal and North-Western Railway Company are still in doubt, and while the capital of that Company has not been absorbed by the investing public, to issue, with a reasonable prospect of success, any new undertaking that would require the immediate subscription of more than 500,000*l.* capital.

2. The gentlemen for whom I am acting have therefore decided, in the first instance, to confine the enterprise they ask permission to carry out to a railway on the metre gauge from the Rajputana-Malwa Railway, near Delhi, to Kalka at the foot of the Himalayas on the Simla Road, running through Sonapat, Panipat, Karnal, and Umballa, leaving to a more favourable season the further extension of the enterprise by branches to Phalera from Panipat and from Karnal to Kaithul. Full reports (copies of which are enclosed, marked A) have been obtained from India of the probable cost and probable receipts to be expected from the railway first projected, and the information gathered from these reports in connection with the line as now limited, as well as other information in the possession of the gentlemen acting in this matter, having been put together in a memorandum (copy attached, marked B), has been placed before the capitalists previously consulted, and I am now desired to state, for the information of the Secretary of State, that the gentlemen on whose behalf I am writing can proceed at once, with a full assurance of success, to form a Company with a share capital of 400,000*l.*, and with a debenture or preference share capital of 100,000*l.*, to build a railway from Delhi to Kalka on the metre gauge.

3. With a view to an early settlement of the contract that will have to be entered into with the Secretary of State, I am directed to enclose for his consideration a copy of the Bengal and North-Western Railway contract, with alterations suggested in red ink, and to give an explanation of the reasons that induce the promoters to suggest those alterations.

### *Section 3.—Construction of Railway.*

It is understood that the Government of India have expressed a desire that the railway from Delhi to Kalka should be made on the broad gauge. There is not the smallest reason to believe that the traffic on this line will ever attain dimensions that cannot be carried with economy, safety, and despatch on a metre-gauge road. Commercially, therefore, the expenditure of money in building a road more costly than is needed for the conduct of business satisfactorily is unjustifiable.

There are indisputably and palpably important military advantages in connecting Umballa with the metre-gauge system of railways in Rajputana, now extending without break for close on 1,700 miles, and linking together the troops stationed at Mhow, Neemuch, Nussereabad, Ahmedabad, Deesa, Agra, Delhi, Cawnpur, and soon perhaps Lucknow, besides the Gun Carriage Factory at Fahteghur and the Arsenal at Ferozepore. Some of these cantonments and



the Gun Carriage Factory are only accessible through metre-gauge lines. As, however, a broad-gauge track may also be deemed by the military authorities in India to be desirable, it is proposed to leave it open to the Secretary of State to lay down broad gauge permanent way at the shortest possible notice, by making the earth and masonry works suitable for both tracks.

*Section 4.—Notification of Route of Railway.*

In consideration of the expense, about 30,000*l.* (earthwork *£*1,14,000, masonry work *£*3,32,000—*£*4,46,000), that will be entailed on the Company by adapting their line for broad gauge, it is hoped the Secretary of State will concede to it the right to use the trunk road bridges and earthworks when this can conveniently be done. As it is intended to fence the railway throughout, there will be no danger to the public, and every care will be taken that the road traffic is not interfered with. There is a large bridge over the Markanda river, between Umballa and Karnal. This is reported to be strong enough for railway purposes, and if it, as well as one or two others, can be utilized, a saving may be effected in the cost of the railway nearly sufficient to cover the extra expense to which the Company will be put in endeavouring to meet the wishes of the military authorities. Keeping the railway alongside, as far as possible, the public road, will save Government some expense in the purchase of land.

*Section 6.—As to the Existing Surveys.*

It is proposed to limit the demand of Government for the reimbursement of cost of past surveys to expenditure since the beginning of 1886. Some limits is necessary, otherwise charges may be brought forward for innumerable surveys between Kalka and Umballa that are of no use to the Company.

*Section 14.—Equipment with Rolling Stock.*

The need of keeping the capital to be asked for from the public as low as possible makes it expedient that the new line should be worked and equipped through the agency of another Railway administration.

The Bombay, Baroda and Central India Railway Company, who will derive considerable benefit from the new line, are willing and ready, as lessees of the Rajputana-Malwa Railway, subject to the sanction of the Secretary of State, to undertake this business, receiving in return 5 per cent. of the gross earnings of the new line for the provision of the stock, besides the same percentage of those earnings for working it as they may expend in working the whole Rajputana-Malwa Railway system, including the new line, which will practically become a component part of that system. All such receipts by the Bombay, Baroda, and Central India Railway Company will of course, be credited to the Rajputana-Malwa Railway. The percentage for working will have to be calculated, exclusive of some general charges to be agreed on, such as London and Indian Agency expenses, and exclusive also for a short period of maintenance charges, which, it is proposed, shall, for a year after completion of the entire system, be debitable to Capital. It is hoped that the Secretary of State will permit the Bombay, Baroda and Central India Railway Company thus to give the help they are ready to render, a help which is almost invariably accorded to branch lines in England by trunk railways, without charge for provision of rolling stock, a favour not solicited for the new line.

*Sections 16, 17, and 18.*

The alterations here only follow what is indicated in the preceding paragraph.

*Section 25.—Maximum Rates and Fares.*

The rates and fares between Umballa and Delhi will be, in all probability, the same as rule on the Rajputana-Malwa Railway, and they will be practically regulated by the competition with the North-Western State Railway for through traffic between those stations. But between Kalka and Umballa the conditions are different. There are stiff gradients, and the line is identical in its characteristics with the Rohilkhund and Kumaon Railway, where special maximum rates and fares were prescribed in the contract. These special maximum rates and fares it is desired to take power to levy on the Kalka-Umballa section, and in the proposals put before the public in regard to this section in the *Gazette of India*, it was admitted by Government that special high fares might be levied for its use.

*New Clause 37.—Extension to Phalera and Kaithul.*

All that is desired is that the new Company may retain power for a limited period after it has finished its main undertaking to construct these two extensions.

As it may be contended that the portion of the Phalera branch between Phalera and Rewari could be worked in a manner detrimental to the Rajputana-Malwa Railway, no objection will be raised to the Capital expenditure on that section being treated as part of the Rajputana-Malwa Railway capital, and to the dividend on it being limited to the same rate as the dividend earned in the half-year on the Rajputana-Malwa Railway. Of course such dividend would be not subject to rebate for provision of rolling stock, and Government would take all the gross earnings on the section as part of the Rajputana-Malwa Railway receipts.

*New Section 38.—Cart and Carriage Service between Kalka and Simla.*

Government, through the agency of the Post Office, now carry goods and passengers from Umballa to Simla. The service between Kalka and Umballa will naturally terminate on the opening of the railway, and it is proposed that the Company may take over the remainder of the service on payment to Government, at a valuation, for the plant now used for it. Such a service, it is obvious, falls more within the functions of a trading Company than of an Imperial Government.

*Section 39.—Participation of Secretary of State in profits.*

The alterations only bring this section into accord with the revised conditions of the Bengal and North-Western Railway contract.

*Section 45.—Statistics and Audit.*

It is proposed to carry, till the new line has been completed throughout for a year, the whole maintenance charges to Capital, and also to give the Company the same period in which to reduce their construction staff. This was partially conceded in the case of the Bengal and North-Western Railway, and a little more is asked on this new line because it is proposed to open the line as fast as it can be passed by the Government Inspector, with a view to get revenue, but this will entail exceptionally heavy maintenance charges at first, and it is only fair that these should be debited to Capital, as but for the rapid opening they would have to be met from that source.

The change about the period for which staff may be retained chargeable to Capital is explained also by what is above stated.

*Section 57.—Termination of the Contract, and Matters consequent thereon.*

The change here made is with the object of giving the proprietors of the line twenty-five years' clear purchase money if Government elect to take over the railway. The Secretary of State for India is, it is understood, desirous to encourage the construction of railways by private enterprise in India, but the stipulation which it is suggested the Secretary of State may forego practically amounts to a foreclosure clause in the case of a prosperous undertaking. For instance, if the new railway should be paying on an average 10 per cent. to its proprietors, the Secretary of State would, without the change proposed, be able to take it over in 1916 at twenty—not twenty-five—years' purchase, however hardly it might bear on the shareholders, who, while not neglecting their own interests, will have employed their money and abilities in a manner tending essentially to promote the national prosperity. It would seem only just and fair that they should be treated on the most liberal principles, and not be subjected to a heavy fine, which undertakings not paying 6 per cent. would escape.

4. There is only one other point left for me to notice. The working agreement in respect of the Rajputana-Malwa Railway will terminate in 1900, and it would be desirable if the Secretary of State would give an undertaking that he would give assistance in carrying on the traffic of the new railway till he elected to purchase in the same way as if the agreement with the Bombay, Baroda and Central India Railway Company had remained in force.

5. Such of the proposed alterations and additions to the Bengal and North-Western Railway Contract as may be accepted by the Secretary of State will, it is presumed, be put in proper legal form by his law advisers.

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No. 755 P. W., dated 25th April 1888.

From—SIR J. E. GORST, Under-Secretary of State for India,

To—T. W. WOOD, Esq.

I have received and laid before the Secretary of State for India in Council your letter dated 22nd March 1888, stating that the promoters of the Delhi-Umballa and Kalka Railway scheme are prepared to proceed at once with the formation of a Company to construct the line on the metre gauge.

In reply, I am instructed to inform you that the Government of India, having recently repeated their strongly expressed opinion in favour of the 5 ft. 6 in. gauge for the railway in question, Lord Cross is unable to entertain the proposals which you have submitted.

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Dated 11th May 1888.

From—T. W. WOOD, Esq.,

To—The Under-Secretary of State for India.

I have the honour to acknowledge the receipt of Sir John Gorst's letter, P. W. No. 755, dated 25th ultimo, intimating that, in consequence of the Government of India having repeated their strongly expressed opinion that the line from Delhi to Kalka should be on the broad gauge, the Secretary of State is unable to accept the proposals of the gentlemen on behalf of whom I am acting to construct that line on the metre gauge.

2. These gentlemen now desire me to point out that their proposals were in accordance with "the basis of the terms embodied in the Bengal and North-Western Company's Contract" for the construction of a metre-gauge railway, and it was on those terms, without referring to a change of gauge, that Sir John Gorst, in his letter, P. W. No. 176, of 29th February last, expressed "the readiness of the Secretary of State to proceed with negotiations." The alterations suggested in the terms in my letter of 22nd March were distinctly stated, in its concluding paragraph, to be open to acceptance or rejection by the Secretary of State at his discretion,

3. The Secretary of State need scarcely be reminded that the successful launching of projects of this kind depends on the prospect of profitable returns, but there is at present no instance of striking success in any Indian Railway constructed by private enterprise without a guarantee from the State. A low mileage capital cost is, therefore, an essential condition for an unguaranteed line, and the prospects of such profitable returns as will render Indian Railway enterprises of this character attractive to English investors become increasingly doubtful the further this condition is departed from. Bearing this requirement steadily in view, the gentlemen whom I represent, having secured a promise of the funds needed for a metre-gauge railway from leading financial firms of London, having made every arrangement for the immediate prosecution of the works, and feeling encouraged by the explicit declaration made by Sir John Gorst in his letter to the Barrow Chamber of Commerce, copy of which is attached, that Lord Cross was willing to offer all reasonable facilities for "the free exercise of the agency of private enterprise," awaited, with confidence, the final reply of the Secretary of State to their proposals. They are disappointed to find from that reply that the Government of India demand, probably for military defensive purposes, considerable additions to the capital outlay contemplated, yielding no commensurate profit, and that the Secretary of State has, consequently, felt himself bound to decline to permit them to organize a Company to construct a railway involving no liability on the finances of India, meeting on a continuous gauge all possible commercial requirements, serving a densely populated and fruitful agricultural country now deficient in railway facilities, and likely to prove, with a limited capital and under experienced and economical management, a success which would do more to promote the investment of English capital on unguaranteed railways in India than any argument.

4. In the event, however, of a railway from Delhi to Kalka being constructed or worked hereafter through any other agency than that of the State, my principals, who are also the Directors of the Bombay Baroda and Central India Railway Company, and whose sole motive in offering to incur the personal responsibilities attached to non-guaranteed enterprises has been to develop the revenue of that Company and of the allied undertaking, the Rajputana-Malwa Railway, desire me to express their earnest hope that the interests of which they are the guardians will be protected by stringent clauses in any contract or working agreement that may be entered into, against the diversion of trade from Bombay by rates favouring Calcutta or Karachi, or by any other means that would tend to deprive Bombay of its natural mileage advantage in the carriage of the goods produced for export in the district to be traversed by the new line. They believe that if a railway could be made from Phalera *via* Rewari to Kurnal, it would help to keep the trade in its present direction, and if Government do not deem it advisable to make this line themselves, the gentlemen for whom I am acting may take up the matter at a later date, if the Sec-

retary of State is prepared to accept the terms already proposed under the heading "New Clause 37," in paragraph 3 of my letter of the 22nd March last.

5. This concession my principals think they are reasonably entitled to expect as some return for the endeavours they have made to promote the policy of carrying out railways in India by private enterprise, in accordance with the repeated declarations in favour of such a policy made by successive Secretaries of State in Parliament, and they have only been prevented in this instance from bringing matters to a successful issue by what appear to be military and political requirements, for all commercial ends are amply met by the proposals I have submitted on their behalf. These requirements my principals tried to meet, as far as lay in their power, by offering to make the earthworks and bridges of the proposed railway adaptable for carrying a broad-gauge road when needed by Government. But no public Company, entirely dependent for its dividend on its commercial receipts, collected on a line not enjoying a monopoly but in active competition with other railways, has a right, with due regard for its shareholders, to undertake the full provision for such requirements without a corresponding pecuniary equivalent.

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*Extract from "Herapath's Railway (and Commercial) Journal," dated 11th June 1887.*

#### INDIAN RAILWAY EXTENSIONS.

Writing to the Barrow-in-Furness Chamber of Commerce, Sir John E. Gorst says :—

"Viscount Cross desires me to repeat the assurance already given to the Association that he is fully sensible of the value of railways in India, and is desirous of seeing their extension speedily, but at the same time judiciously, carried on; but hitherto, as you are aware, it has been almost invariably necessary to accompany their prosecution with a guarantee from the Government of interest on the capital employed. Railway operations in India have thus become inseparably connected with the financial arrangements of the Government, which, especially when taken with the low rate of exchange now prevailing, entail a serious demand upon the resources of the State, and might, if carried too far, call for fresh taxation, the great objections to which were clearly recognised in the Report of the Select Committee on Indian Railways of 1884, of which you were a member. The Committee stated their wish most emphatically to endorse a declaration of the Government of India that the proposed extension of railways should not involve additional taxation. Notwithstanding these difficulties, however, the Government of India have, both directly and through Companies, undertaken within the last five years several extensive railway works, which include frontier lines on the north-west, lines in Burmah, and lines in various parts of the country, which, besides serving important political and commercial purposes, will assist to mitigate the effects of famine, the aggregate cost being about 35,000,000*l*. While, however, the efforts of Government, either direct or through guaranteed Companies, are necessarily restricted by financial considerations and by the obligation to avoid any step which might lead to additional taxation, the field of private enterprise is unlimited, and I am desirous to state that Viscount Cross is most willing to offer all reasonable facilities in his power on the part of the Government of India to the free exercise of such an agency, and will be happy to receive any suggestions from the Association of Chambers of Commerce of the United Kingdom in view to the application of the principle."

No. 1001P. W., dated 6th June 1888.

From—SIR J. E. GORST, Under-Secretary of State for India,

To—T. W. WOOD, Esq.

I am directed by the Secretary of State for India in Council to acknowledge the receipt of your letter of the 11th ultimo, relative to the proposed railway from Delhi to Umballa and Kalka, and to acquaint you, in reply, that negotiations are proceeding with promoters of a Company for making the line in question on the gauge considered by the Government of India to be most suitable for the objects in view.

With regard to the hope expressed in paragraph 4 of your letter, that the interests of the Bombay, Baroda and Central India Railway and of the Rajputana-Malwa Railway may be protected by stringent clauses in any contract or working agreement that may be entered into against the diversion of traffic from Bombay, I am to inform you that, beyond the usual control exercised by Government in the case of other lines, to prevent undue preference to particular persons or interests, the Secretary of State is unable to pledge himself to impose conditions of the nature referred to.

With reference to the suggested line from Phalera *via* Rewari to Kurnal, Viscount Cross will be prepared to consult the Government of India on any proposals which the Directors of the Bombay, Baroda and Central India Railway Company may wish to make on the subject.

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No. 875, dated 6th July 1888.

From—T. W. WOOD, Esq.,

To—The Under-Secretary of State for India.

The Board of Directors of this Company have had under their consideration that portion of Sir John Gorst's letter, No. P. W. 1001, of the 6th June, to my address, which states that the Secretary of State is not inclined to insert in any contract or working agreement that may be entered into with the promoters of a Company to be formed to undertake the construction of a broad-gauge railway from Delhi to Kalka clauses specially designed to prevent the diversion of traffic from Bombay to Calcutta, more stringent than those he has already inserted in the contracts of other railways in India lately built by Companies with the assistance of Government.

2. The Board have no doubt that the contract with any new Company will contain a clause concerning undue preference or advantage similar to those referred to in the margin. Such a clause would, it is believed, be sufficient to guard the interests the Board have at heart, if not rendered abortive by an arrangement regulating rates on the new line as if it formed part of the system of one connected Company, while the other connected lines were treated as foreign.

3. For instance, the new railway, when built, might be worked by the East Indian Railway Company, which Company has no undue preference clause in its contract. On that line edible grains and seeds, the principal items of export traffic from the district to be traversed by the new line, are charged for short distances about three times as much per mile as when carried over a long lead; and if the East Indian Railway Company are permitted to treat the new line as part of their system, while other railways are treated as foreign, the charge for those staples from, say, Kurnal to Delhi, would, in the case of through booking

to Calcutta, be about one-ninth of a pie per maund per mile, while, if booked to Bombay, it would be one-third, because at Delhi the traffic would pass on to a foreign line. That, the Board suggest, would be undue advantage given to the Calcutta route to the sea.

4. My Board, therefore, hope that in the arrangements sanctioned by the Secretary of State all the railways in connection with the new line may stand on an equal footing as regards through rates to ports of export.

5. I may add that this Company has already an understanding with the North-Western State Railway for regulating rates as respects competition between Bombay and Kurrachee.

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Dated 25th July 1888.

From—SIR J. E. GORST, Under-Secretary of State for India,  
To—The Secretary, Bombay, Baroda and Central India Ry. Co.

I am directed to acknowledge receipt of your letter No. 875, dated 6th July 1888, urging again the necessity for insertion in the arrangements to be entered into with the projected Delhi to Kalka Railway of clauses providing against the undue diversion of traffic from that line to Bombay.

In reply to these further representations, which have received careful consideration from the Secretary of State in Council, I am desired to say that His Lordship sees no reason for making any provision of the nature desired by your Board other than those which have been already indicated by Sir J. Gorst's letter of the 6th June 1888 as intended to be inserted in any arrangement for construction of the line in question.

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## **SECTION V.**

### **Railway Administration.**

- 1.—Oudh and Rohilkhand Railway.**
- 2.—Railway Traffic Rates.**
- 3.—Railway Stores.**





## RAILWAY ADMINISTRATION.

## 1.—Oudh and Rohilkhand Railway—Purchase by the State.

No. 119 (Railway), dated 24th June 1887.

From—The Government of India,

To—The Secretary of State for India.

The first period of twenty years from the date of the contract of the Oudh and Rohilkhand Railway Company (originally called the Indian Branch Railway Company) will expire on the 2nd August next, and if the notice required under clause 21 of the Company's contract be given at any time between that date and the 1st January 1888, the State can acquire possession of the undertaking on the 1st July 1888. We desire therefore to lay our views on the subject before Your Lordship, as it is desirable that a decision shall be arrived at and communicated to the Company as soon after the 2nd August next as practicable.

2. We submit for Your Lordship's information a Memorandum prepared by the Accountant General, Public Works Department, which enters in detail into the financial aspects of the question.

From paragraphs 13 to 16 of this Memorandum it appears that the probable saving of interest on Capital stock caused by purchasing the line would be about £25,000 annually, whilst, as shown in paragraphs 17 to 21, owing to the rate of exchange fixed in the contract, the saving would be much larger so soon as the net earnings of the line exceeded 5 per cent. on the Capital. Their progress in this direction will be seen from the statement appended.

As through communication will, by the completion of the bridge over the Ganges at Benares, be very shortly established over this line between Calcutta and the Punjab, and the large expenditure which has been incurred on this bridge will thus for the first time be productive, we do not think it unreasonable to anticipate that the line will before long earn more than 5 per cent., and, therefore, that the financial advantage of purchasing will not be limited to the £25,000 annually, referred to in the preceding paragraph.

3. We are therefore strongly of opinion that, whatever future arrangements may be made for its working, the undertaking should be purchased by the State.

4. The method of purchase will have to be settled in England on a consideration of the state of the money market at the time, but as in the case of the Sindh, Punjab and Delhi Railway we are inclined to favour the raising of a loan at 3 or  $3\frac{1}{2}$  per cent. and paying off the shareholders at the average price arrived at under the terms of the contract.

5. The next question for consideration, in the event of the purchase being carried out, is that of the future management and working of the undertaking.

It might, as in the case of the East Indian Railway, be leased to the same Company under new contract, or to another Company, such as the Bengal and North-Western Railway Company, or again, it might be worked under the control of the Local Government either as an Imperial State line, or as a Provincial line, or, lastly, it might be worked as an Imperial State line under the control of our Director General of Railways.

See our despatch No. 141,  
Railway, dated 5th September  
1884.

6. In our despatch noted in the margin we have discussed a proposal made by the Bombay, Baroda and Central India Company, and another made by Messrs. Sanderson & Co., of Calcutta, for extending existing railways to Umballa or its neighbourhood, and in another despatch we have considered a proposal for making over to the East Indian Railway Company that portion of the North-Western Railway which extends from Ghaziabad to Saharanpur.

We have expressed in those despatches our disapproval of all the schemes discussed; one main objection to all being that we considered it undesirable to allow any private Company to connect with the North-Western Railway in the neighbourhood of either Umballa or Saharanpur.

7. The grounds of this objection were stated at considerable length in our despatch No. 107 R., and its enclosures, and it is not therefore necessary to recapitulate them here.

8. Hitherto, owing to the absence of through communication with Calcutta *via* the Oudh and Rohilkhand Railway, the considerations which have influenced our opinion in the cases above mentioned did not exist with regard to that Railway, but they will have equal force with regard to it as soon as this through communication shall have been established, which, as above observed, will be very shortly.

On this ground, therefore, we think it essential to place the management of the line in the hands of Government, and, for a time at least, we should prefer that it should be an Imperial State line worked under the orders of the Director General of Railways.

Later on it might perhaps be transferred to the Local Government to be worked either as a Provincial or as an Imperial State line under suitable conditions.

9. We append copy of a letter which will show that our views have the concurrence of the Government of the North-Western Provinces and Oudh.

10. Before concluding this despatch we think it desirable to invite attention to the many cases of mismanagement and obstructiveness on the part of the Company some of which have formed the subject of correspondence with Your Lordship and your predecessors in office, and which, in our opinion, afford strong grounds for taking the control of the undertaking out of the hands of the Company at the earliest possible date.

11. We would refer especially to the following despatches:—

No. 59 R., dated 12th May 1884, and No. 127 R., dated 8th August 1884.—On the subject of the slow progress on the Northern Extension.

No. 19 R., dated 3rd February 1885.—Commenting on the views held by the Chief Engineer of the Company on the necessity for estimates.

No. 163 R., dated 25th October 1886.—Remarking on the generally inefficient management as evidenced by the difficulty of securing adequate maintenance of the line, and prompt execution of new works.

No. 190 R., dated 21st December 1886.—On the delay in the construction of the Ajodhya Branch.

No. 196 R., dated 28th December 1886.—Regarding the increased cost of the Ganges Bridge, Benares.

No. 198 R., dated 28th December 1886.—On the subject of the refusal of the Company to reduce its lower class fares.

No. 9 R., dated 18th January 1887.—On the non-submission of revised estimate for the Northern Extension.

This last case called forth very severe comments from the Board of Directors as shown in the enclosures of Your Lordship's Despatch No. 35 R., dated 24th March 1887.

12. In addition to the above, we would note the continued resistance offered by the Agent in 1884 to the replacing of the admittedly inefficient clip joints by proper fish-plates, a resistance which was continued until we had recourse to the summary measure of limiting the speed on the line to 15 miles an hour pending compliance with our wishes. This case was not specially reported by us.

Other cases of a similar nature might, no doubt, be cited, but we consider that the above, which, though in some instances originating with the local officers, reflect upon the Company who permitted inefficiency to continue for prolonged periods, are sufficient to justify the step we recommend of taking over the undertaking at the earliest possible date.

#### *Documents accompanying.*

1. Comparison of net receipts with guaranteed interest.
2. Memorandum by Lieutenant-Colonel A. J. Filgate, R.E., Accountant General, Public Works Department, on the purchase of the Oudh and Rohilkhand Railway by the State.
3. Letter from the Government of the North-Western Provinces and Oudh, No. 786W.R., dated 5th April 1887.

#### *Comparison of net Receipts with Guaranteed Interest.*

Half-year ending.	Net Revenue.	Interest charges.	REMARKS.
	<i>R</i>	<i>R</i>	
31st December 1886 . . . .	10,20,336	19,09,692	Net Revenue less than interest charges.
30th June " . . . .	17,81,374	18,98,625	
31st December 1885 . . . .	6,18,920	18,48,340	
30th June " . . . .	11,76,441	17,82,252	
31st December 1884 . . . .	7,16,815	17,01,538	
30th June " . . . .	16,09,331	16,46,636	
31st December 1883 . . . .	11,06,167	15,67,995	
30th June " . . . .	13,67,185	14,80,000	
31st December 1882 . . . .	6,08,641	14,80,000	
30th June " . . . .	11,40,391	14,80,000	
31st December 1881 . . . .	8,30,066	14,74,137	
30th June " . . . .	11,45,633	14,40,000	
31st December 1880 . . . .	7,63,360	14,19,945	
30th June " . . . .	11,41,050	14,00,000	
31st December 1879 . . . .	8,84,736	14,00,000	
30th June " . . . .	14,38,773	14,00,000	Surplus R33,773.

Memorandum by Lieut.-Colonel A. J. FILGATE, R.E., Accountant General, Public Works Department, on the purchase of the Oudh and Rohilkhand Railway by the State.

Under the contract with the Oudh and Rohilkhand Railway Company (then called the Indian Branch Railway Company), dated 2nd August 1867, clause 21



The estimated capital outlay on this railway up to the end of 1887-88 amounts to £9,375,000, so the Company will have to raise a further sum of about £575,000 to meet the outlay it is likely to incur.

The Debenture bonds now existing fall due as under :—

						4 per cent. Debentures.	
						£	£
4th June 1887	.	.	.	.	.	615,300	
1st October 1887	.	.	.	.	.	200,000	
1st May 1888	.	.	.	.	.	300,000	
16th May 1888	.	.	.	.	.	345,000	
1st June 1888	.	.	.	.	.	500,000	
							1,960,300
						3½ per cent. Debentures.	
						£	£
24th January 1887	.	.	.	.	.	500,000	
16th May 1887	.	.	.	.	.	155,000	
16th August 1887	.	.	.	.	.	529,000	
1st August 1888	.	.	.	.	.	740,000	
1st December 1890	.	.	.	.	.	500,000	
10th August 1891	.	.	.	.	.	31,000	
							2,455,000

The Secretary of State's estimates for the years 1886-87 and 1887-88 provide for the renewal of all the Debentures falling due up to the end of 1887-88, and for the raising of a further sum of £500,000 on capital account, doubtless by the issue of Debentures.

The Debenture Stock was issued in the year 1873 and is redeemable at par, after the expiration of 25 years from date of issue, on six months' notice being given in the *London Gazette*.

The amount that has immediately to be dealt with in purchasing the Railway is the £4,000,000 of Capital stock. It is not possible to say at present what the purchase price of the stock will be, nor indeed do I know how the mean market value is really determined. I put up a statement showing the weekly quotations of the stock in the London market from 1st July 1884 to date. I think it may roughly be assumed from this statement that the purchase price will be about £126 per £100 stock. This would make the purchase price of the Capital stock £5,040,000.

The present price of Government of India 3½ per cent. sterling stock in the London market is 102½. It is very probable that the majority of the holders of the Oudh and Rohilkhand Railway Capital stock would accept payment for their stock in Government of India 3½ per cent. sterling stock, the amount of stock made over in payment being based on the current market price of such stock.

For the purposes of investigating the probable financial effect of purchasing the Railway, it may be assumed that the Capital stock can be purchased for £5,000,000.\*

The interest on £5,000,000 3½ per cent. stock would amount to £175,000 per annum. The guaranteed interest now paid on the £4,000,000 Capital stock of the Company, at 5 per cent., amounts to £200,000 per annum. Thus the immediate result of purchasing the Railway on these conditions would be an annual saving of £25,000.

A further result, however, to be considered in connection with the purchase, is the liability that will probably arise at an early date of the Company earning

\* If the line is purchased by the issue of 3½ per cent. stock, at 102½, the amount of 3½ per cent. stock needed would be about £4,900,000.

surplus profits in excess of the guaranteed interest, if the present contract is allowed to remain in force.

Under the present contract, partly owing to the early opening of the bridge over the Ganges at Benares, the recent completion of the Northern Extension, and to the development of traffic that may be expected to follow the increased facilities afforded, and partly owing to the transactions of this Company being brought to account at the exchange of  $\text{Rs } 1 = 2$  shillings, the line may fairly be expected at an early date to yield a return to the shareholders in excess of the guaranteed interest.

The unfavourable effect of the 2 shillings rate of exchange on the finances of the State is so self-evident as to need no explanation; but in considering the argument in favour of purchasing the railway it appears desirable to place the facts on record.

The interest on the total probable expenditure of the railway on Capital account at the end of 1887-88 will amount to about £400,000; to place this amount down in London, at  $1s. 5\frac{1}{2}d.$  per rupee, the rate of exchange adopted in the estimates of this year, will cost the State nearly 55 lakhs of rupees.

For the purposes, however, of declaring surplus profits, the £400,000 paid for guaranteed interest is, under the existing contract, taken as 40 lakhs of rupees. As soon as the net earnings of the Railway exceed the guaranteed interest, one-half of the surplus is paid to the Company. Thus, if under these circumstances the net earnings amount to 41 lakhs, the Company would get £400,000 interest and  $\frac{1}{2}$  lakh of rupees of surplus profits; while the State would have to pay away  $14\frac{1}{2}$  lakhs more than it received from the Railway. Similarly, if the Company earned 55 lakhs, or just sufficient to pay the cost of placing the guaranteed interest in London, the Company would receive  $7\frac{1}{2}$  lakhs on account of surplus profits, and the State would have to disburse  $7\frac{1}{2}$  lakhs in excess of the revenue derived from the Railway. In short, the use of the 2 shillings rate of exchange will, if the present contract is continued, render necessary large payments to the Company on account of surplus profits which will in reality not have been earned.

The result of purchasing the Railway may be approximately stated as under:—

- (i) an immediate saving of at least £25,000 per annum in charges for interest;
- (ii) a prospective saving in the liability to pay surplus profits at no distant date; this may amount to  $7\frac{1}{2}$  lakhs of rupees per annum and possibly to a larger sum.

With regard to the question of working the Railway after it has been purchased by the State, while the handing over of the Railway to the Government, North-Western Provinces and Oudh, to be worked as a Provincial Railway at a future date may be looked upon as a probable contingency, I do not think that any such transfer should be carried out for some time.

There are many matters in connection with the Oudh and Rohilkhand Railway which could doubtless be improved by better and stronger management.

The questions relating to through rates and other matters which have led to frequent disputes between the managements of the Oudh and Rohilkhand Railway and the East Indian Railway, respectively, require to be placed on a satisfactory footing, and this cannot be effected unless this by no means light task be entrusted to some authority possessing a thorough knowledge of railway working.

After the Oudh and Rohilkhand Railway has been purchased, it should, in my opinion, be worked, so far as foreign traffic is concerned, more for the general benefit of the country at large and the State revenue of Railways as a whole, than with reference to the return which this traffic may bring to the Home Railway. Rates and fares for foreign traffic should be determined on a broad basis, and so far as this can be arranged, each railway concerned of the same gauge should get its mileage share of through rates.

All attempts to establish *undue* competition between Railways which have in reality, the same owner, should be prohibited, as any such competition can only result in loss of revenue to the State. There is little doubt that undue competition in the way of rates is now being carried out between the Oudh and Rohilkhand and East Indian Railways; and but a short time ago, when the North-Western Provinces Government were the owners of the Cawnpore-Achnera Railway, a somewhat vigorous war of rates was carried on between the East Indian Railway and the Cawnpore-Achnera Railway, which led to a direct diminution of the State revenue. The North-Western Provinces Government, finding it could not come to terms with the East Indian Railway, commenced negotiations with the Bombay, Baroda and Central India Railway Company, which ultimately led to the working of the Cawnpore-Achnera Railway being made over to that Company.

In discussing the proposed agreement with the Bombay, Baroda and Central India Railway Company with Major Gracey, who was then the chief railway officer of the North-Western Provinces Government, he allowed that the Government had resorted to the Company simply because they could not work the line satisfactorily. If the Government, North-Western Provinces and Oudh, so recently failed in working a short line like the Cawnpore-Achnera Railway in a satisfactory manner, I fear there is not much probability of that Government successfully managing the much larger and more complicated undertaking comprised in the Oudh and Rohilkhand Railway system. Under any circumstances it does not appear advisable to make this Railway over to the Provincial Government until all the arrangements in connection with the Railway have been thoroughly established on a satisfactory footing.

I notice that the Government of the North-Western Provinces has some idea of making over the Oudh and Rohilkhand Railway to some other Company at no distant date. I do not think that any such proposal should be entertained, as the establishment of a new Company in the place of one about to be disestablished is likely to lead to the perpetuation of the state of affairs which now exists, and which I believe it is now considered desirable to terminate. Moreover, the establishment of a new Company would probably sweep away the greater portion of the benefit which the finances of the State are likely to derive from the purchase of the Railway. Government has virtually control over the rates and fares on the Rajputana-Malwa Railway and East Indian Railway, and on the Oudh and Rohilkhand Railway being purchased by the State, it will have similar power over the rates and fares of that line.

It is a matter for consideration whether the Government of India should not take a more active part in exercising its authority over rates and fares than it does at present. While it is desirable on the one hand to prevent any undue enhancement of charges which are likely to interfere with the development of traffic, it is on the other hand essential that special provisions should be adopted to ensure that the State finances are not damaged by undue competition.

If it is decided that the Oudh and Rohilkhand Railway is to be ultimately made over to the Government of the North-Western Provinces, in doing this it



should be distinctly provided that the Government of India should exercise the same control over the rates and fares of the Railway as it has now the power to exercise over the rates and fares in force on the Rajputana-Malwa Railway and on the Indian Midland Railway under the contract relating thereto, and further that no competition rates should be introduced until duly sanctioned by the Supreme Government.

*Weekly Quotations of Oudh and Rohilkhand Railway shares from 1st July 1884.*

(GUARANTEED 5 PER CENT.)

Date.		Closing price.	Date.		Closing price.
27th June	1884 . .	126—128	26th June	1885 . .	120—124
4th July	" . .	"	3rd July	" . .	"
11th "	" . .	"	10th "	" . .	"
18th "	" . .	"	17th "	" . .	118—122
25th "	" . .	127—129	24th "	" . .	120—124
1st August	" . .	"	31st "	" . .	121—123
8th "	" . .	"	7th August	" . .	120—122
15th "	" . .	"	14th "	" . .	"
22nd "	" . .	"	21st "	" . .	"
29th "	" . .	128—130	28th "	" . .	"
5th September	" . .	"	4th September	" . .	121—123
12th "	" . .	129—131	11th "	" . .	"
19th "	" . .	"	18th "	" . .	"
26th "	" . .	"	25th "	" . .	"
3rd October	" . .	"	2nd October	" . .	"
10th "	" . .	"	9th "	" . .	122—124
17th "	" . .	127—129	16th "	" . .	"
24th "	" . .	"	23rd "	" . .	"
31st "	" . .	127—130	30th "	" . .	"
7th November	" . .	126—128	6th November	" . .	123—125
14th "	" . .	125—128	13th "	" . .	125—127
21st "	" . .	127—129	20th "	" . .	126—128
28th "	" . .	128—130	27th "	" . .	"
5th December	" . .	"	4th December	" . .	128—130
12th "	" . .	"	11th "	" . .	"
19th "	" . .	"	18th "	" . .	"
24th "	" . .	"	24th "	" . .	"
2nd January	1885 . .	125—127	31st "	" . .	126—128
9th "	" . .	123—125	8th January	1886 . .	"
16th "	" . .	121—123	15th "	" . .	"
23rd "	" . .	122—124	22nd "	" . .	"
30th "	" . .	123—125	29th "	" . .	"
6th February	" . .	122—124	5th February	" . .	"
13th "	" . .	121—123	12th "	" . .	"
20th "	" . .	"	19th "	" . .	"
27th "	" . .	120—122	26th "	" . .	125—127
6th March	" . .	118—121	5th March	" . .	127—129
13th "	" . .	115—120	12th "	" . .	"
20th "	" . .	"	19th "	" . .	129—131
27th "	" . .	"	26th "	" . .	128—130
2nd April	" . .	118—122	2nd April	" . .	"
10th "	" . .	115—120	9th "	" . .	"
17th "	" . .	"	16th "	" . .	"
24th "	" . .	114—118	22nd "	" . .	127—129
30th "	" . .	112—116	30th "	" . .	"
8th May	" . .	115—120	7th May	" . .	"
15th "	" . .	118—122	14th "	" . .	"
22nd "	" . .	"	21st "	" . .	126—128
29th "	" . .	"	28th "	" . .	"
5th June	" . .	122—126	4th June	" . .	"
12th "	" . .	123—127	11th "	" . .	127—129
19th "	" . .	122—126	18th "	" . .	"

*Weekly Quotations of Oudh and Rohilkhand Railway shares from 1st July 1884—continued*

Date.	Closing price.	Date.	Closing price.
25th June 1886 . .	127—129	5th November 1886 . .	126—128
2nd July „ . .	126—128	12th „ „ . .	127—129
9th „ „ . .	„	19th „ „ . .	128—130
16th „ „ . .	„	26th „ „ . .	„
23rd „ „ . .	„	3rd December „ . .	129—131
30th „ „ . .	„	10th „ „ . .	127—128
6th August „ . .	„	17th „ „ . .	126—127½
13th „ „ . .	„	21st „ „ . .	126—128
20th „ „ . .	„	28th „ „ . .	125—127
27th „ „ . .	„	4th February „ . .	„
3rd September „ . .	„	11th „ „ . .	„
10th „ „ . .	„	18th „ „ . .	„
17th „ „ . .	„	25th „ „ . .	„
24th „ „ . .	„	4th March „ . .	„
1st October „ . .	„	11th „ „ . .	„
8th „ „ . .	„		
15th „ „ . .	„		
22nd „ „ . .	„		
29th „ „ . .	„		

No. 786 W.R., dated 5th April 1887.

From—The Secretary to the Government of the N.-W. Provinces and Oudh,  
Public Works Department,  
To—The Secretary to the Government of India, Public Works Department.

With reference to the statement made in the 2nd paragraph of this office letter No. 717 W.R., dated 21st March 1887, I am now directed to submit a reply to Government of India, Public Works Department, letter No 570 R.C., dated 22nd June 1885, in respect to the future working of the Oudh and Rohilkhand Railway.

2. In the letter under reply, it was stated that, as far as it was possible for the Government of India to express an opinion so long beforehand, it seemed desirable that advantage should be taken of the expiration of the contract with the Oudh and Rohilkhand Railway Company in August 1887 to purchase the Company's system, to place it under the control of the Lieutenant-Governor and work it possibly under a united management with the Cawnpore-Achnera and Lucknow-Sitapur lines.

3. In this office letter above quoted, His Honour the Lieutenant-Governor has already recorded his opinion in favour of neutralizing this line, pointing out that it is essentially a North-Western Provinces Railway, a main arterial line traversing these Provinces from one end to the other, serving materially the trade, both local and export, and offering a through route from south-east to north-west, 539 miles in length, shorter and cheaper than the route (577 miles) from Benares by the East Indian Railway and North-Western Railway to Saharanpur. This line, with the completion of its Northern Extension, has secured a northern outlet free from the control of the East Indian Railway, and it has been shown that it is the policy of this Government to keep the commerce of the large and productive tract traversed by this railway system free to develop and seek its outlets in any direction, unfettered by monopolies or restriction of the competing lines which rest on the sea and either touch this tract of country or push their terminal branches into our area. It is from this point of view

mainly that the question of the future administration of the Oudh and Rohilkhand line is regarded by this Government, and the recommendations now submitted are for the most part based upon the policy that has been above explained.

4. It seems important therefore to keep this railway for the present independent and unconnected with any of the existing Companies whose lines connect these inland districts with the seaboard. And this can be best effected by entrusting its management to the State, as has been done in the case of the North-Western Railway system, at any rate for a certain period after the lapse of the present Company's contract. There are various improvements and readjustments that can be made in the working arrangements, while the opportunity is useful for revising the administration, for ascertaining what are the real needs and capabilities of the line, and for determining its future extensions and its relations with adjoining systems. It would always be within the power of the Government to negotiate a fresh contract, and indeed this is a contingency which in the Lieutenant-Governor's opinion should be borne in mind as the probable and proximate settlement of final arrangements for the railway working.

5. With this object His Honour the Lieutenant-Governor recommends that—

- (a) Notice be given of the intention of Government to purchase the Oudh and Rohilkhand Railway, after the expiration of the contract with the Company in August 1887.
- (b) Notice be given to the Company that Government proposes to take the railway under its own direct management, so that the services of the present agency and establishments will not be required, except perhaps in the cases of a few specially selected officers.
- (c) The system be constituted (at any rate for a time) a Government State Railway under Provincial management, with head-quarters at Lucknow.

6. This policy is recommended independently of what may be determined in regard to the metre-gauge system lying north of the Oudh and Rohilkhand Railway; and it is not proposed to complicate the present question, which is to some degree urgent, by importing into the discussion the subject of the future position of the metre-gauge lines that traverse the Northern Districts from Bareilly eastward to Gorakhpur. If the Sitapur-Pilibhit line remains a Provincial Railway, it may be expedient to work it as a feeder loop, controlled by the same contract agency at Lucknow. And if a northern system of light lines continuous from Katgodam by Pilibhit and Sitapur linked on to the Bengal and North-Western and even to the Tirhoot system should hereafter be established, this eventually need not materially affect our consideration of the present issue. To the suggestion in your letter of the 22nd June 1885 for uniting the management of the Oudh and Rohilkhand line with the Cawnpore-Achnera system, it seems now unnecessary to refer. Nor does the Lieutenant-Governor anticipate any risk of ruinous competition if the metre line and the broad-gauge line fall under separate charges and interests.

7. Although the Government cannot enter into possession before the 1st July 1888, yet the first term of the contract expires in August 1887, so that it is necessary to decide very soon whether the line shall be purchased by the Government, and the case is therefore submitted for orders. The arrangements for the future administration of the line may be considered at leisure when the main question has been settled.

No. 61 (Railway), dated 9th June 1887.

From—The Secretary of State for India,  
To—The Government of India.

Your Excellency is doubtless aware that the first term of the Oudh and Rohilkhand Railway Company's lease will expire on the 2nd August next, between which date and the 2nd February 1888 it is optional with the Secretary of State to give notice to the Company of his intention to purchase the line under the terms of the contract.

2. It will manifestly be desirable, on financial grounds alone, to exercise this option, but having regard to the financial operations now in contemplation, the precise manner in which the power shall be exercised must be determined hereafter.

3. The important question as to the arrangements to be made with regard to the future administration of the railway remains for consideration; and before coming to any determination on the subject, I shall be glad to be furnished with the views of your Government and with any recommendations which you may desire to make, both as regards the agency by which the railway should be managed, and its continuance, or otherwise, as a separate system, with any additions which it may hereafter be deemed expedient to make to it.

4. I forward herewith copy of a letter\* from the Directors of the existing Company, offering, on the termination of their contract, to enter into a new agreement for working the

\* Dated 9th May 1887.  
railway on such terms as may be deemed advisable.

5. It is unnecessary for me to point out that, in this matter, time is valuable. I therefore request that you will communicate your views to me without unnecessary delay.

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No. 55 G., dated 9th May 1887.

From—Major-General C. C. JOHNSTON, Managing Director, Oudh and Rohilkhand Railway Company, Limited,  
To—The Under-Secretary of State for India.

As the Oudh and Rohilkhand Railway Company's contract with the Secretary of State for India will be terminable on the 2nd August next (that date completing the first period of twenty years), it is probable that the arrangements to be made for the future working of the system of lines constructed will shortly come under consideration, and I have the honour, therefore, by desire of the Board, to offer a few remarks on the position of the Company, to which the favourable attention of the Secretary of State is solicited.

2. Under the contract of the 2nd August 1867, the Company were to construct a main line from Buxar, on the East Indian Railway, to Moradabad, or such other point in Rohilkhand as might be determined upon, with branches to Benares, Cawnpore, Byramghât, Fyzabad, and to the foot of the hills near Nynee Tal, in all about 672 miles.

It was seen by the Board, from the first that their system would be very incomplete if its main line were to terminate at Moradabad, and they pressed for an extension of it to form a junction with the then Sindh, Punjab and Delhi Railway, now the North-Western Railway.

3. Eventually, under the contract, dated 5th December 1883, it was arranged that the Company's main line should extend from Mogul Serai, on the East Indian Railway, to Saharanpur, on the North-Western Railway (in lieu of a

main line from Buxar to Moradabad), with a branch to Hurdwar in addition to the branches as under the contract of 2nd August 1867.

4. Regarding the Northern Extension of the Company's main line from Moradabad to Saharanpur to join the North-Western Railway, the Board, in a letter to the Secretary of State, dated 9th October 1872, observed that, unless the Government intended to construct the line, they trusted that this Company would be considered as having the first claim to it, and as far back as June 1873, nearly fourteen years ago, they expressed their readiness to undertake it as an integral part of their system, with the understanding that the money required for its construction was to be considered and treated as a portion of the original capital of the Company.

In August 1881 authority was given to the Company to undertake the construction of the line on account of the Government of India, but after a lengthened correspondence, the Secretary of State, in a letter dated 6th June 1883, with reference to one from the Board of the 20th December 1882, suggested for consideration whether the readiest and most expedient course would not be to treat the line as an integral part of the Company's undertaking in the same manner as the Benares Bridge, the difference in this suggestion to that made by the Board in 1873 being that the money required for the completion of the work, instead of being treated as a portion of the original capital of the Company, was to be raised by means of debentures. The Secretary of State's letter concluded by observing that the question as to what arrangements should be made for the future working of the whole undertaking was to be reserved for consideration when the first period of the Company's contract expired.

5. The Board accepted this suggestion, but desired to attach to that acceptance an understanding that when the first period of the contract expired, any arrangement to be made should provide for the future working of the undertaking by the present Company. In reply, they were informed that, while Lord Kimberley was willing that the Company should complete the line as a part of their system, he regretted that it was not in his power to give any pledge as to the working of it after the expiry of the first period of the Company's contract.

6. At this time so much progress had been made in the construction of the works that the Board, under all the circumstances, felt that it only remained for them to accept the arrangement proposed for completing the extension line and junction with the Sindh, Punjab and Delhi system, without any conditions as to the future, and unconditional acceptance was communicated to the Secretary of State in their letter of the 20th July 1883. Lord Kimberley's satisfaction at the conclusion of the arrangement was expressed in a letter of the 31st idem, and that of the Government of India was communicated to the Board in a letter of the 25th October 1883. A supplemental contract was accordingly entered into, dated the 5th December 1883.

7. The line from Moradabad to Saharanpur, with the exception of the permanent bridge across the Ganges at Balawalla (a temporary bridge has been constructed at that point, but the permanent bridge is now approaching completion), and the Hurdwar branch (with the exception of  $3\frac{1}{2}$  miles, which were opened on the 20th August last) were completed throughout by the end of 1885, and through communication was established between Benares and Saharanpur on the 1st January 1886.

8. When the Benares Bridge works and junction with the East Indian Railway at Mogul Serai are completed, and opened for traffic, which it is confidently expected may be done before the close of this year, the Company will

have no unproductive capital; and, judging from the steadily increasing traffic, it may be assumed with confidence that the completed system as a whole will soon pay more than the present guaranteed interest of 5 per cent.

9. By the original contract the Oudh and Rohilkhand system was restricted as a through line, and isolated by having no Northern Junction. It was limited to serving the North-West Provinces in connection with the East Indian Railway, which it was to enter at Buxar, and it was only by subsequent arrangements that junctions were made with the East Indian Railway at Cawnpore and Allyghur.

10. The bridge across the Ganges on the Allyghur branch was opened for traffic on the 6th June 1874, and that at Cawnpore on the 15th July 1875, with the result that a considerable portion of the traffic towards Howrah was diverted from the Company's main line at Chandausi and at Lucknow, instead of being carried on to Benares, where there was no junction with the East Indian Railway, making this lower end of the incomplete system very unproductive and reducing generally the length of lead on the main line.

11. The bridging of the Ganges at Benares was not included in the Company's contract, but was provided for under the supplemental contract of the 5th December 1883.

12. The Cawnpore branch, as far as the Ganges, was constructed by the Indian Branch Railway Company, which was the designation of this Company before the contract for the construction of the Oudh and Rohilkhand lines under guarantee was entered into, and the Allyghur branch was added at the instance of the Government under a supplemental contract, dated the 8th April 1869.

13. This recapitulation will serve to show that during the twenty years, at the end of which the Government can exercise the first option of purchase under the contract of 1867, the original incomplete scheme has been developed into a perfect system, with four bridges across the Ganges, and without a link wanting to make it complete; and that the final additions incorporating it with the great railway systems which run to the north and west and east of it have only been conceded when this period was drawing to a close, so that the works will be completed as a whole just as the first term of the contract expires. Under these circumstances it is hoped that the Government will not now enter into possession of a system very different to that originally contracted for, without giving a favourable consideration to the Company's position in view to its continuance for a further period of ten years, as provided for in the contract, or, if this is not considered expedient, the Board hope that the Government will make use of this Company's agency in working the system which they have constructed in accordance with arrangements made from time to time with the Government, a new agreement being entered into similar to that made with the East Indian Railway Company, or on such other terms as may be deemed desirable.

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No. 140 (Railway), dated 15th July 1887.

From—The Government of India,

To—The Secretary of State for India.

Your Lordship's Railway Despatch No. 61, dated 9th June 1887, asking for our views on the subject of the future administration of the Oudh and Rohilkhand Railway on the expiry of the first term of the Company's lease, has been in great measure anticipated by our Railway Despatch No. 119, dated 24th

idem, which gave our general views, and those of the Government of the North-Western Provinces and Oudh, on the entire question.

But the letter from the Board of Directors of the Company which was enclosed in your despatch under reply appears to call for a few further remarks from us.

2. The main facts in connection with the arrangements for the construction of the Northern Extension are correctly stated in the Board's letter, and from their paragraph 5 it is clear that under these arrangements the Government is in no way pledged to leave the working of the Railway in their hands after the expiry of the first term of the contract.

3. As to the arguments advanced in the last paragraph, we would merely observe that the Company has steadily received their guaranteed interest at the rate of 5 per cent. on the share capital, and that, should the line be purchased, the premium paid will be about 25 per cent., so that we consider the Company will have no just grounds of complaint, whatever course be now decided on.

4. The Government has paid to the Company up to the end of 1866, on account of guaranteed interest, a sum of £4,710,143, and has therefore been the principal sufferer by the delay which has occurred in the completion of the Company's system.

5. We did not in our late despatch allude specifically to the alternative of making over the line or its working to the East Indian Railway Company, although in paragraphs 5 to 7 we gave our reasons for objecting to the Oudh and Rohilkhand Railway being made over to any Company; and we therefore add a few remarks with reference to this Company in particular, their Board being, we have reason to suppose, anxious to take it over.

6. In the letter from the Government of the North-Western Provinces and Oudh, which was forwarded with our Despatch No. 119 Railway, an objection was raised to allowing any of the competing lines for traffic to the seaboard, entering the area traversed by the Oudh and Rohilkhand Railway, and this objection would naturally apply to a transfer of the line to the East Indian Railway Company for working.

7. Again, the result of any such transfer would be to make Saharanpur a terminus of the East Indian Railway, and to give it a shorter route from that place to Calcutta than it would have if the proposal discussed in our Railway Despatch No. 107, dated 3rd June 1887, were agreed to.

8. In enclosure No. 1 of that despatch strong arguments were advanced against allowing the East Indian Railway to extend so far west.

9. It was shown that the distance from Saharanpur to Howrah *via* the East Indian Railway was 1,058 miles, and *via* the Oudh and Rohilkhand Railway 1,014 miles, as against 1,000 miles to Bombay *via* Delhi, and that this station being thus practically the traffic shed it was desirable not to allow the approaches to it to fall into the hands of any of the competing Companies to rival ports.

10. It was further argued that if the East Indian Railway could obtain a footing at Saharanpur, it would take advantage of its cheap coal to advance further into the Punjab, offering low rates so as to draw the Punjab traffic from Karachi, and thus force the North-Western Railway and the Bombay, Baroda and Central India Company, in both of which Government is interested, to unnecessarily lower theirs; the loss of revenue caused by this undue competition falling eventually on Government.

Paragraph VIII.

Paragraph XII (1) (2).

11. Both these arguments are equally applicable against the transfer of the Oudh and Rohilkhand Railway to the East Indian Railway Company.

12. Finally, we agree with the Board of Directors in thinking it probable that the Oudh and Rohilkhand Railway, which is now approaching completion, will shortly give a good return on the Capital expenditure, and we see no reason why a large portion of the anticipated profits should go to the shareholders of the East Indian Railway, instead of exclusively to the State, which has for so many years borne the heavy loss on the guarantee.

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No. 74 (Railway), dated 14th July 1887.

From—The Secretary of State for India,

To—The Government of India.

With reference to my Railway Despatch No. 61, dated 9th June 1887, in respect to the arrangements to be made in consequence of the expiry of the first term of the Oudh and Rohilkhand Railway Company's lease on the 2nd

\* Dated 15th June 1887.

August next, I transmit herewith for consideration copy of a communication\* which has been addressed to this office by the Board of the Bengal and North-Western Railway Company, suggesting the Oudh and Rohilkhand Railway system being entrusted to them on terms which will be found set forth in their letter.

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Dated 15th June 1887.

From—E. L. MARRYAT, Esq., Secretary, Bengal and North-Western Railway Company,

To—The Under-Secretary of State for India.

It having been brought to the notice of the Board of Directors that the contract of the Secretary of State with the Oudh and Rohilkhand Railway Company is likely to be terminated next year, I am directed to enquire whether under these circumstances, the Secretary of State would be willing to enter into negotiations with this Company for the purpose of taking over and working that Railway, as if so, I am to submit that the following terms might commend themselves to the Secretary of State, or at all events form a suitable basis for further negotiations :—

- (a) The Bengal and North-Western Railway Company to raise the amount required to pay off the shareholders of the Oudh and Rohilkhand Railway Company under the terms of the contract, say £5,200,000, by issuing debenture capital to the extent under guarantee from the Secretary of State (or if this be not considered acceptable, part of the amount might be raised as preferred share capital at a fixed rate of interest, the interest being paid by the Secretary of State until earned by the Oudh and Rohilkhand Railway).
- (b) The Company to renew the outstanding debentures of the Oudh and Rohilkhand Railway Company, say £4,800,000, as they fall in, under the Secretary of State's guarantee, at the current rate of the day, and to raise any further capital needed in the same way.
- (c) The line to be worked by the Company, and the net earnings to be applied half-yearly as follows :—

1st.—In payment to the Company of 5 per cent. of the net earnings as a return for their services in working.



2nd.—In repayment to the Secretary of State of the interest on the debenture debt for the half-year.

3rd.—In repayment to the Secretary of State of the interest paid by him for the half-year (if any) on the preference share capital.

4th.—Any surplus (when earned) to be divided half-yearly as follows :—

Half to the Company.

Half to the Secretary of State.

- (d) All conversion of rupees to sterling and *vice versa*, to be effected at the Secretary of State's average rate of drawing for the half-year.
- (e) The general terms of the contract to be similar, subject to the foregoing conditions, to those by which the Rajputana Railway is worked by the Bombay, Baroda and Central India Railway.
- (f) The Company to make a connection between the Bengal and North-Western Railway and the Sitapur-Lucknow Railway under the terms of the Company's present contract in lieu of the Benares branch.
- (g) The Company also, if desired by the Secretary of State, to construct on suitable terms a direct line from Jaunpur *via* Roy Bareilly to Lucknow, with branch from Roy Bareilly to Cawnpore; also any required extensions from Jaunpur to the Azimgur and Ghazipur districts.
- (h) The Company would also, if desired by the Secretary of State, include in the system on suitable terms the line projected by the Government of India, extending from Benares *via* Palamow (with branch to Gya) to join the Bengal-Nagpur Railway at Chundil or Pooroolia, and such other lines as may be agreed upon.

2. The effect of these terms would be, assuming the net earnings of the Oudh and Rohilkhand Railway to be, as in 1886, about 28½ lakhs of rupees a year, equivalent at current rates of exchange to, say, £200,000 a year, that the company would get £10,000 a year for its services in working the line, and that all the remainder of the earnings would belong to Government, until such an improvement has been effected in the financial position of the undertaking as to admit of the Company earning surplus profits.

3. The Board hope that by unity of management they would at once effect a considerable saving in expenses, which would, after paying the above-mentioned small percentage for working, sensibly reduce the heavy loss Government now sustain under the present contract with the Oudh and Rohilkhand Railway Company.

4. The amalgamation of the Oudh and Rohilkhand Railway system with another Railway, if given without protection of the interests of this Company in respect of charges between the Bengal and North-Western Railway and Calcutta, as well as in regard to the regulation of through mileage and other rates, and without powers to this Company to lay metre-gauge rails over the large bridges and approaches thereto of the Oudh and Rohilkhand Railway, would act most prejudicially to the interests of the shareholders of this Company, who alone have embarked their capital in India without the shelter of a guarantee or subsidy from Government.

5. The Board earnestly trust that no such amalgamation will be carried into effect without the claims of this Company being carefully considered after full discussion with its representatives.

No. 159 (Railway), dated 19th August 1887.

From—The Government of India,

To—The Secretary of State for India.

We have the honour to acknowledge the receipt of Your Lordship's Railway Despatch No. 74, dated the 14th July 1887, forwarding for our consideration copy of a communication from the Board of Directors of the Bengal and North-Western Railway Company, containing proposals for the Oudh and Rohilkhand Railway system to be entrusted to them on certain terms.

2. The proposals have been duly considered by us, and we think it in the first place highly undesirable on general grounds to entrust the working of a railway under a guarantee to the administration of a Company without a guarantee. In the case of general charges or other items of which the incidence was not thoroughly clear, there would naturally be a tendency to throw the expenditure on the line, which in the interests of the shareholders appeared best fitted to bear it.

3. In addition to this we know that the Oudh and Rohilkhand and Bengal and North-Western Railways are now actively competing for the traffic of the Northern Districts served by them, and we fear that if the two lines were worked by the same management, there would be some likelihood that preference would, perhaps unconsciously, be shown for the Bengal and North-Western Railway route for the despatch of goods in all possible cases.

4. The financial reasons against the proposals of the Bengal and North-Western Railway Company are also in our opinion very strong, as Your Lordship will perceive from the accompanying note prepared by the Accountant General, Public Works Department.

5. On the whole, there is nothing in the present proposals that leads us to modify the views we expressed to Your Lordship in our Despatch No. 119 Railway of the 24th June last.

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*Document accompanying.*

Note by Major A. G. Begbie, R.E., Accountant General, Public Works Department, on the proposal of the Bengal and North-Western Railway Company to take over the Oudh and Rohilkhand Railway.

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*Proposal of Bengal and North-Western Railway to take over the Oudh and Rohilkhand Railway.*

Assuming that the total Capital of the Railway (Oudh and Rohilkhand) as

\* Enclosure to Despatch No. 119 R. of 24th June 1887. taken in Colonel Filgate's\* note is £9,375,000, and that exchange is taken at 1-5½, the line must have net earnings of—

R					
32,14,285	to cover	.	.	.	2½ per cent. on Capital.
38,57,142	„	.	.	.	3 „ „
45,00,000	„	.	.	.	3½ „ „
51,42,857	„	.	.	.	4 „ „
57,85,714	„	.	.	.	4½ „ „
64,28,571	„	.	.	.	5 „ „

In the Despatch of 24th June 1887, it was submitted that before long the line might be looked upon to earn 5 per cent. on its Capital. It is now earning only about 28 lakhs of net earnings; so that the effect of the proposals may be considered on the above figures.

Assuming further that the whole of the present Capital *stock* is converted into preference share capital or debentures raised at the same rate at which Government could borrow, say  $3\frac{1}{2}$  per cent., as in Colonel Filgate's note, and that debenture interest as paid at present remains unchanged, the sum required to

cover interest charges would be \*  
 R51,41,000, and as the first charge on the  
 net earnings is 5 per cent thereof as  
 remuneration to the Company, the line  
 must earn R54,11,500, or about  $4\frac{1}{2}$  per cent., before Government ceases to sustain any loss, *i.e.*, before surplus profits are divisible.

Above that rate the Company is to get  $\frac{1}{2}$  surplus profits.

With the line earning 5 per cent. the shareholders of the Company would receive for division amongst them, after paying all their liabilities on account of the Oudh and Rohilkhand Railway—

	R
5 per cent. of net earnings . . . . .	3,21,428
$\frac{1}{2}$ of surplus profits . . . . .	4,83,071
	<hr/>
	8,04,499
	<hr/>

This is nearly double as much as the Bombay, Baroda and Central India received in 1885 for working the Rajputana-Malwa Railway, a line which pays a much higher dividend.

This little contribution from the working of the Oudh and Rohilkhand would give a return to the Bengal and North-Western Railway shareholders of nearly 3 per cent. on their paid up capital (now a little short of £2,000,000)!!

I do not think anything more need be said to prove that the terms are most exorbitant: and as far as I can see, no *quid pro quo* is offered.

Experience has shown that, as far as working expenses are concerned, there is little, if any, economy in the amalgamation of the Rajputana-Malwa State Railway with the Bombay, Baroda and Central India: and there is nothing very tempting in the suggestion that the Company is prepared to make certain extensions on *suitable terms* if the present proposals are the Company's idea of "suitability."

Then again from a financial point of view I do not think it would do to

I think no extension should be permitted except on the non-guarantee system. If any inducement is required, it might take the form of a subsidy.

A. G. B.

amalgamate a line, financed in the way proposed, with a line that is working without guarantee. The temptation would be irresistible to favour both earnings and expenses of the latter to the detriment of the former.

The desirability of retaining the Oudh and Rohilkhand (for the present at least in the hands of Government) from an administrative point of view has already been sufficiently discussed. Where there are so many competitors for this railway, it is evidently something not lightly to be parted with.

There is another financial advantage in keeping the line in the hands of Government which I have not yet alluded to, *viz.*, the possibility of Government being able to raise money for the purchase of the line cheaper than a

Company could do so, either as "preference share capital at a fixed rate of interest" or by guaranteed debentures.

9th July 1887.

A. G. B.

No. 93 (Railway), dated 8th September 1887.

From—The Secretary of State for India,

To—The Government of India.

Your letters, No. 119 Railway, dated the 24th June last, and No. 140 Railway, dated 15th July last, have been before me in Council. In these you express the same opinion as that conveyed in my Despatch No. 61 Railway of the 9th June, in favour of purchasing the Oudh and Rohilkhand Railway at the expiration of the first term of the Company's lease, and you anticipate my inquiries in the same Despatch as to the management of the line when it shall have passed into the hands of the Government.

2. The first point to be considered is the date at which the notice of purchase shall be given. I have come to the conclusion that it will be convenient, for financial reasons, to effect the purchase on the 31st December 1888. It will accordingly be necessary to give the notice after the 31st December next, and, as it is possible that legislative powers may be requisite to carry out the arrangement that may be determined on, I have fixed upon the 2nd January 1888 as the day on which notice shall be served upon the Company both in this country and in India.

3. A copy of the form is forwarded herewith for your guidance. Should any other method than that prescribed by the contract for the purchase be resorted to, Your Excellency shall be made fully acquainted with the particulars.

4. The chief object of this Despatch is to settle the date of the notice to the Company. It is not necessary now to decide upon the question of future management. The opinion of your Government that the railway should, for a time at least after its transfer, be treated as a State Imperial line, and be worked under the orders of your Director General, shall receive my careful consideration in Council, and I need not assure Your Excellency that your recommendation will have great weight with me. I will now only express the opinion that, if this course is followed, it should only be as a temporary measure.

To—The Oudh and Rohilkhand Railway Company, Limited.

In pursuance of the power and authority given by the 21st Clause of the Contract, dated the 2nd day of August 1867, made between the Secretary of State in Council of the one part and the Oudh and Rohilkhand Railway Company, Limited (then and therein called by its original name of "The Indian Branch Railway Company, Limited") of the other part, the Secretary of State in Council of India hereby gives notice that the Secretary of State in Council of India intends to purchase, on behalf of Her Majesty, for the purposes of the Government of India, the railway and works of the Oudh and Rohilkhand Railway Company, Limited, constructed under the said Contract of the 2nd day of August 1867, and under any other contract or agreement between the Company and the Secretary of State in Council of India, together with the stations and telegraphs (if any), and the engines, carriages, stock, plant, and machinery belonging to the said railway and works, but subject to such debts and liabilities (if any) as may have been incurred to Her Majesty or to the

Secretary of State in Council of India (exclusive of any arrears of interest on the capital of the Company, paid by the Secretary of State in Council of India, under the conditions of the hereinbefore-mentioned contracts, or any of them, which shall not have been repaid), or to any person or persons, with the sanction of the Secretary of State in Council of India, and to interest on such of the said debts as carry interest, from the day on which possession shall be taken on the said railway, but not from any earlier time.

No. 64 (Railway), dated 8th June 1888.

From—The Government of India, Public Works Dept.,

To—The Secretary of State for India.

We have the honour to acknowledge the receipt of Your Lordship's telegram

Telegram, dated 14th May 1888.

From—The Secretary of State,

To—The Viceroy.

Proposals for working Oudh and Rohilkhand Railway. It is desirable settle matter speedily. Let me know as soon as possible which alternative do you prefer. I see grave objections to British North-Western Railway whose natural extension is to be with Tirhoot Railway and other metre-gauge Railways. A possibility of agreement with present or future Government for extension of line with State should be considered. If some satisfactory arrangement cannot be promptly made, must fall back on temporary State working.

of 14th May last, repeated in the margin, asking for our opinion on the subject of the working of the Oudh and Rohilkhand Railway after the 1st January next, when the line will become the property of the State.

2. We have replied somewhat fully in a telegram of the 4th instant, which is appended to this despatch, and have now the honour to give in greater detail our opinions on the subject, and the reasons which have led us to the con-

clusions at which we have arrived.

3. In considering this question, we have been met by the primary difficulty that, though we believe that both the East Indian Railway Company and the Bengal and North-Western Railway Company are anxious to get a lease of the line, and that the present Oudh and Rohilkhand Railway Company is also desirous of obtaining a fresh contract for working it, either with or without the additional obligation of constructing a new line from Mogal Serai to Purulia, we have had no intimation of the terms on which any of the Companies would undertake the work, nor even of the general nature of the conditions which would be acceptable to them.

4. Up to the present time the Oudh and Rohilkhand Railway has been worked at a considerable loss, the annual payments by Government for the last four years to meet the difference between the guaranteed interest and the net earnings of the line, if converted at the average rate of exchange for the year, having been in round numbers—

	R
1884 . . . . .	17½ lakhs.
1885 . . . . .	27½ „
1886 . . . . .	23½ „
1887 . . . . .	23½ „

5. By the purchase of the line the amount of interest on the capital invested will be reduced, unless the rate of exchange becomes much worse than at present, from nearly 55 lakhs of rupees to about 51½ lakhs; and in consequence of the opening of the Dufferin Bridge at Benares in October last, and the completion of the Northern Extension shortly before that time, it may be reasonably anticipated that the gross receipts of the line will be materially larger in 1889 and in following years than they were in 1887 and previously

Our estimate is that they may very probably rise from 66½ lakhs in 1887 to 76 lakhs in 1889.

With an increase in gross receipts, a reduction of the percentage of working expenses on those receipts (which was 52·83 in 1887) should certainly follow.

6. In any negotiations therefore, or discussions, concerning the future working of the line, due allowance should, in our opinion, be made for the consideration that much better results than heretofore may be expected in the near future; and that, as time goes on, the loss on the working will steadily diminish, and will probably ultimately disappear and be converted into a profit.

7. That these anticipations are not unreasonable is, we think, supported by the fact that three Companies are endeavouring to obtain a lease of a line which has only been worked hitherto at a considerable loss; but it can hardly be expected that, when the details of the terms of a lease are being discussed, any of them will be prepared to accept terms based upon figures much better than those of 1887.

8. Passing now to the consideration of the different schemes under which the future management of this line can be carried on, the possible alternatives appear to be—

- (1) to make over the working to the present Company on a new contract;
- (2) to do the same, the Company undertaking in addition the construction of an extension to Purulia or Calcutta without a guarantee;
- (3) to lease the line to the Bengal and North-Western Railway;
- (4) to lease it to the East Indian Railway either as part of the Undertaking or otherwise;
- (5) to retain it as a State line, managed and worked under the direct supervision of Government.

9. As to the first of these alternatives, we see no useful function which such a Company could perform. The capital which is needed to pay off the shareholders has been raised, so that it cannot be desired to leave a part of the old capital outstanding, as was done in the case of the East Indian Railway. We do not see, therefore, what room there would be for a Company, or for the employment of its capital, if any were raised. The line would be worked and managed by the staff in India: some controlling authority is required to govern that staff, either in India or in England, but it would not be worth while to create a Company simply in order to elect a Board of Directors to control the working staff.

10. The second alternative seems to us objectionable, as under any such scheme the equivalent of a guarantee on the cost of the new line would certainly have to be paid in one way or another out of the receipts of the existing Railway. We would prefer to keep the scheme for construction quite separate from that for working the old line.

Nor are we very desirous of seeing the line constructed through Palamow to Purulia unless it is continued to the sea either at Orissa or Calcutta.

11. The third alternative has already been condemned in Your Lordship's telegram now under reply, and we need not therefore enter into any discussion as to the advisability of employing the agency of the Bengal and North-Western Railway Company, or the terms which might be accepted.

12. We have next to examine the fourth alternative, *viz.*, the transfer of the working of the line to the East Indian Railway Company; and first we have to consider the advisability on general grounds of employing this agency. There are two arguments against it, both of which have considerable weight in

our eyes: first, the danger of throwing so much power as such an amalgamation would give into the hands of a single Company; and, secondly, the danger of encouraging undue competition for traffic.

¶ 13. In our Railway Despatch No. 107, dated 3rd June 1887, we submitted, for the consideration of Your Lordship, correspondence in which the transfer to the East Indian Railway Company of the section of the North-Western Railway between Ghaziabad and Saharanpur was strongly opposed by the Governments of the North-Western Provinces and Oudh and of the Punjab, and by the then Manager of the North-Western Railway, now our Director General of Railways, on the ground chiefly of the ruinous competition for the traffic of the districts near Saharanpur, which must inevitably ensue if access to that part of the country which is the traffic-shed between Karachi, Calcutta, and Bombay, were given to the East Indian Railway. To this correspondence, in the general conclusions of which we then agreed, we would invite Your Lordship's attention. If those conclusions are sound, as we still believe them to be, they point to the undesirability of allowing the Oudh and Rohilkhand Railway, with its terminus at Saharanpur, to be worked by that Company.

14. Supposing these objections of principle to be overruled, it remains to discuss the ways in which, and the terms on which, we think the agency of the Company might be utilised.

15. In the first place, we may say at once that any arrangement at all corresponding to the terms on which the East Indian Railway is now worked would be out of the question. These terms were accepted by Parliament only on the express understanding that they would not form a precedent; and no justification can exist now for giving away one-fifth of the net profits of the line to any private Corporation. Nor could we approve of any arrangement under which the supposed loss on working the Oudh and Rohilkhand Railway would be compensated by any modification in the present contract of the East Indian Railway adverse to Government.

16. The terms upon which the East Indian Railway Company propose to work the Patna-Gya line and other State lines have not yet been settled; but the proposal is that 45 per cent. of the gross earnings should be credited to the East Indian Railway Revenue Account; that 7 per cent. of the gross earnings should be paid to the Company absolutely; and that 1 per cent. of the net earnings should be contributed to the Company's Provident Fund. Assuming that the actual cost of working is 45 per cent., the percentages paid would be—

	Per cent.
Paid to the Undertaking for working expenses . . . . .	45·00
Paid to the Provident Fund . . . . .	0·55
Paid to Company as remuneration . . . . .	7·00
	<hr/>
	52·55
	<hr/>

Out of which the Company, as distinguished from the Undertaking, would receive 7·55 per cent. in addition to its actual expenses. The Government would receive 47·45 per cent.

If the Company could work the line at 40 per cent. of the gross receipts, then there would be a profit to the Undertaking of 5 per cent. out of the 45, and of this Government would, under the contract, get 4 per cent., and the Company 1 per cent., thus raising the payments to the Government to 51·45 per cent., and those to the Company in excess of their expenses to 8·55 per cent.

With a gross revenue of 76 lakhs, Government would receive, under Patna-Gya proposed terms, Rs36,06,200 if the Company worked at 45 per cent. and

Rs39,10,200 if it worked at 40 per cent. Assuming that the Government could work the line directly at 50 per cent. of the gross receipts, the return with the same receipts would be 38 lakhs of rupees, or a mean between the two. But whereas under Government management the more the revenue increased, the less percentage would be required for working and the greater would be the net return: under Patna-Gya. terms Government would never get more than 47·45 per cent. of the gross receipts in the one case, and 51·45 per cent. in the other. As soon as the gross receipts reached a figure at which Government could work the line under 48·55 per cent., the balance would be in favour of Government management. We think that, even if the Company could work at the low figure of 40 per cent., the Patna-Gya terms are not sufficiently favourable to the interests of the State.

17. The only terms which we think the Government ought to accept, if it leases this line to the East Indian Railway, are that the Undertaking should work the line at a fixed percentage of gross earnings, say 40 per cent., Government receiving 60 per cent., besides the four-fifths of the surplus profits, if any, which would fall to it under the contract with the East Indian Railway Company, from the 40 per cent. paid to the Undertaking.

There is no doubt that owing to its cheap coal and the fact that the amalgamation with the Oudh and Rohilkhand Railway would entail a comparatively small addition to the general strength and charges of the establishment, while it would be followed by large savings in the Locomotive Department, the East Indian Railway Company could work the line at a smaller percentage of gross receipts than either the Government or any independent Company; and on this account, if the preliminary objections stated in our paragraphs 12 and 13 can be got over, and reasonable terms made, it might be cheaper, at least in the first instance, for Government to use the agency of the East Indian Railway than to work the line in any other way.

18. A second mode of employing that Company has occurred to us, arising out of the remark made in paragraph 9. With the working staff fully constituted in this country, all that is required in addition is a power of central control, which may be vested in the Director General of Railways as representing the State in this country, or in a Board of Directors in England. It seems not impossible that the East Indian Railway Board of Directors might be utilised for this purpose, receiving a small sum, such as (say) 1 per cent. on the net profits, for their remuneration. By such an arrangement Government would secure the services of a body of capable and experienced men, and the single management would prevent the existence of any unwise competition between the two lines. But it would be difficult to distribute fairly between the two lines the savings accruing from such an amalgamation, and we have not seen our way to work out this suggestion in any practical and definite form.

19. But though we have described the terms which we might be prepared to accept as financially reasonable, we do not expect that the East Indian Railway would be willing to work the line on these terms; nor do we feel satisfied that the financial advantage which would accrue under this arrangement is great enough to outweigh the political and administrative arguments set out in our paragraphs 12 and 13 above.

20. Should it be determined, notwithstanding the objections raised by us, eventually to make over the working of the line to a Company, it seems to us to be practically certain that better terms could be secured a few years hence, when the full benefits of the recent large additions to the Capital Account shall have been secured, than at the present time, when the through communication



between Mogal Serai and Saharanpur by the Oudh and Rohilkhand system has been only just completed.

21. There remains then the last of our alternatives, which is that the Oudh and Rohilkhand Railway should on its purchase by Government be worked as a State line; and it follows necessarily from what has gone before that, in our opinion, this is the best, and almost the only, course now open to us—a conclusion which is identical with that communicated to Your Lordship in paragraph 8 of our Despatch No. 119 Railway, dated 24th June 1887.

22. Whether this arrangement is to be a permanent, or, as suggested in the Despatch just quoted, only a temporary, one need not, we think, be decided at the present time; but it is obvious that there are many objections to taking over the line under State management, avowedly as a merely temporary measure, and with the intention that as soon as the new staff have got into good working order, and become acquainted with the conditions of trade of the districts traversed by the line, they would be broken up and dispersed, and the management made over to the new hands.

23. As an important factor in the decision to be arrived at, it must be remembered that, in consequence of the transfer of so many of our State Railways in recent years to the management of Companies, and of the construction of new lines having been so largely taken up by private agency on behalf of the State, we have now a considerable surplus establishment which entails a useless burden on our finances—a burden which has been only partially relieved by the temporary expedient of the grant of special leave on half-pay to a number of pensionable officers for whom employment cannot be found.

24. Should our general conclusion as to the immediate future of the line meet with Your Lordship's approval, and if it is eventually settled that the line will permanently remain under State management, it will probably be found desirable to add to the existing system the section of the North-Western Railway between Ghaziabad and Lahore. This, whilst not making the system too large for one management, will distribute the general charges over a greater length of railway, and will materially reduce the length of line controlled by the management of the North-Western Railway, which, since the opening of the Sind-Pishin and Sind-Sagar Sections, has become almost too large for one system.

25. In the first instance, at any rate, it will probably be necessary to place the line under the control of our Director General of Railways, as the Government of the North-Western Provinces and Oudh has at present no Railway staff and no Railway advisers; but, as noticed in our Despatch No. 19 (Public Works), dated 27th March 1888, we have under consideration schemes for eventually transferring the control of all lines to one or other of the Local Governments, and the ultimate control of the Oudh and Rohilkhand Railway, if continued to be worked as a State line, would depend on the decision arrived at on the general scheme.

26. As regards the superior staff to be employed, we shall probably retain a selected portion of that of the Company so as to secure some of the local knowledge, and mitigate to some extent the hardship which would be entailed by the dismissal of the whole staff; but two-thirds of the staff required will probably be provided from our surplus establishments without difficulty. We have called for complete rolls of the existing staff, from which a selection will be made. The subordinate staff will probably be retained unless reductions are found to be feasible.

27. We trust that, on a consideration of the views above set forth, Your

Lordship will be able to agree with the conclusion at which we arrived, *viz.*, that the line should be worked from the 1st January 1889 as a State line; and as a good many detailed arrangements will have to be made, we would request Your Lordship to communicate the decision which may be arrived at by telegraph.

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Dated 4th June 1888.

Telegram from—The Government of India,  
To—The Secretary of State for India.

Your telegram in Public Works Department, dated 14th May last. Oudh and Rohilkhand Railway. No necessity for Company merely to work line. Company might be found to construct line to Purulia without guarantee, but with profitable lease of railway in lieu of guarantee. This arrangement is not approved, as equivalent of guarantee would have to be paid out of profits of lease. We object to lease to East Indian Railway Company on account of competition at Saharunpur and making company too powerful. If it is to be so leased, then Undertaking should work at fixed percentage of gross receipts, say forty per cent., Government receiving sixty per cent. plus four-fifths profits on working, if any, earned by Undertaking, but acceptance by Board doubtful. We consider it would be in the true interests of the State to manage as State Railway worked by the State. We can arrange to take over working and maintenance 1st January next selecting best of present staff, balance being our surplus Railway staff, thus relieving State Railways. No negotiating Company likely to make allowance for improvement in receipts which certainly will follow opening Dufferin Bridge.

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No. 91 (Railway), dated 26th July 1888.

From—The Secretary of State for India,  
To—The Government of India.

I was on the point of addressing Your Excellency on the subject of the Oudh and Rohilkhand Railway when your letter, No. 64 (Railway), dated 8th June, was received.

2. In that letter you refer to various alternatives which have occurred to you in regard to the management of the line on its purchase by the State in January next, and, after pointing out objections to all of them, you conclude by recommending that it be retained in the hands of your Government, and be worked as a State line.

3. My telegram of the 12th June\* will have anticipated the wish expressed in the last paragraph of your letter that I should communicate to Your Excellency my decision by telegraph.

\* Telegram to Viceroy, dated 12th June 1888.  
Yours 4th June. Oudh and Rohilkhand Railway. In deference to your wishes, I have decided in Council to leave in your hands arrangements for working Railway after purchase.

4. While consenting, under the circumstances of the present time, to the line being managed for the present under the direct orders of your Government, I beg that Your Excellency will understand that I do not wish to depart from the policy, which has been recognized by my predecessors, of relieving your Government, as much as possible, of the details of Railway administration, and of relegating to an agency separate from, but controlled by, Government, the duty of managing commercial lines of railway in India.

5. The period during which the working of the Oudh and Rohilkhand Railway will remain in the hands of your Government will be determined by

circumstances. The remarks in paragraph 21 of your letter imply that the period should not be short, but I shall look forward, in due course, to receive your more matured opinions on this point, as well as upon the more important question of the permanent arrangements to be made for the future management and extension of the Oudh and Rohilkhand Railway system.

6. Your Government is no doubt justified in expecting that an improvement will take place in the receipts of the line consequent on the opening of the Dufferin Bridge, and on the completion of the Northern Extension. When the time arrives for making terms with a Company, more satisfactory data than now exist will thus be available for forming the basis of a working agreement. In the meanwhile it is satisfactory to know that the annual charge for interest on the capital representing the cost of the undertaking after its purchase will be reduced by about 70,000*l.* annually, notwithstanding that the Railway Stock will be paid off at a premium of 25*l.* per cent. I consequently leave it to Your Excellency's Government to consider the further necessary arrangements to be made for working the Railway by the State on its passing from the hands of the existing Company, and the points referred to in paragraphs 24 to 26 of your letter under reply as to the possible redistribution of a portion of the lines now worked with the North-Western system, and the allotment of the working staff so as to absorb, as far as possible, any available surplus establishments, as well as the question of the superior control.

\* Letters from the Oudh and Rohilkhand Railway Company, Nos. 5 G., 52 G. and 70 G. of 17th January, 9th May, and 28th June 1888.

Letter from the Bombay, Baroda, and Central India Railway Company, No. 1479, of 23rd September 1887.

Letter from East Indian Railway Company, No. 61, of 11th May 1888, and enclosures.

Letter from Indian Midland Railway Company, No. 10, of 20th January 1888.

Letter to ditto, of 4th July 1888.

Letter from Rohilkhand and Kumaon Railway Company, of 9th January 1888.

Letters from Bengal and North-Western Railway Company, Nos. 216, 617, and 628, of 3rd January, 30th April, and 13th June 1888.

Letter from Messrs. Matheson & Co., dated 16th May 1888, and enclosure.

Letter from Messrs. Matheson & Co., dated 25th July 1888, and enclosure.

7. I also forward herewith, for your information and consideration, copies of various proposals\* which have been submitted for working, for extending and for taking in hand the whole or portions of the Oudh and Rohilkhand system.

#### ENCLOSURES.

### No. 1.

No. 5 G., dated 17th January 1888.

From—Major-General C. C. JOHNSTON, Managing Director, Oudh and Rohilkhand Railway Company, Limited,

To—The Under-Secretary of State for India.

I have the honour to acknowledge receipt of a formal notice, dated the 2nd instant, to the effect that the Secretary of State for India in Council will exercise the right of purchasing the Oudh and Rohilkhand Railway, under Clause 21 of the Contract.

2. In your letter, No. 1964 P. W., dated the 20th October last, intimating that such notice would be served, it was observed that the arrangements for the subsequent working of the Railway are still under consideration, and, by the Board's desire, I have now to state that they would be glad to enter into an arrangement for continuing to work the system of lines constructed by the Company on

some new basis, such, for example, as that made with the East Indian Railway or with the Midland or Bengal-Nagpur Railways; or an arrangement might be entered into similar to that proposed in your letter, No. 601 P. W., dated the 23rd May 1882, when negotiations were pending relative to the Northern Extension of the Company's main line. The arrangement then proposed was that, for every 100% stock 125% new stock at  $3\frac{1}{2}$  per cent. should be substituted, such new stock to be subject to repayment at par; a working agreement to be entered into with the Company until the 1st January 1900, the Company to share equally with the Government the surplus profits.

3. The circumstances connected with the Company's undertaking from the commencement were stated in the Board's letter of the 9th May last, No. 55 G.

4. The Company have just completed a most important undertaking in connection with the trunk system of railways in India, extending over 693 miles, and comprising works of great magnitude, among others four bridges over the Ganges (hitherto unbridged), the cost of the system, including very heavy bridging, large workshops, and a full equipment of rolling stock, having been less than 13,000% a mile.

5. It was almost impossible for the system, isolated as it has been until now, to prove a commercial success, and the extensions to Saharanpur and Mogul Serai were sanctioned so late in the term of the Company's lease that they have only been completed concurrently with its termination. With the system now established (which is capable of profitable expansion) there is every prospect of the lines paying more than the guaranteed rate of 5 per cent. interest.

6. It may be mentioned that, in addition to their own lines, the Company are now working a length ( $107\frac{1}{2}$  miles) of the Lucknow-Sitapur and Siramow Provincial State Railway, and the Agent, under the Board's instructions, has informed the Local Government that the Company are ready to co-operate with them in the extension and construction of any such lines comprised between the Ganges and the Gogra.

7. Under the Company's Articles of Association, the Company have power to enter into negotiations and conclude agreements with the Government for the working of existing lines of railway or the construction of new ones. The termination, therefore, of the present Contract does not affect their position in this respect, and allows of their raising additional capital for the extension of the Oudh and Rohilkhand system, or in respect of new works. It will thus be seen that no additional legislative powers are required to enable a fresh agreement to be made between the Secretary of State and the Company, and the Board desire to add that they will be prepared to consider any suggestions which might be made as regards the Company's present administration, both in this country and in India, and for strengthening its efficiency.

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## No. 2.

No. 52 G., dated 9th May 1888.

From—Major-General C. C. JOHNSTON, Managing Director, Oudh and Rohilkhand Railway Company, Limited,

To—The Under-Secretary of State for India.

A General meeting of the Oudh and Rohilkhand Railway Company will be held on the 13th June, when the shareholders will no doubt expect to learn

whether, on the purchase of their Railway by the Secretary of State for India the agency of the Company is to be continued for working it. The Board therefore venture, with reference to their letter \* No. 5 G., of the 17th January last, to again address you on the subject.

2. Were effect to be given to an arrangement on the basis proposed in that letter for the issue of new guaranteed stock in lieu of cash, or 5 per cent. India stock, as under the Contract, it would not, it appears to the Board, be a departure from the Secretary of State's intention not to extend the guarantee system, but merely a modification or restriction of an already existing guarantee.

3. Under the arrangement suggested, the Oudh and Rohilkhand Railway Company would continue to exist for the purpose of working the lines which they have constructed, and which, as has already been pointed out, have only been so recently completed as not to allow of their value being fairly tested; and the Board, in the hope that such an arrangement may be made, take the opportunity of renewing their offer to undertake the construction of any further lines of railway that may be desired, especially the one referred to in their letter, No. 139 G., dated 24th October 1884, to extend from Mogul Serai through Palamow (where it would be joined by a branch from Gya) and the Ranchee plateau to a suitable point of junction with the Bengal-Nagpur Railway, or any portion of it, *e.g.*, the length from Mogul Serai to Palamow, with the Gya branch. This length might probably be undertaken without any Government guarantee, interest at the rate of 4 per cent. per annum being paid out of capital during construction, and on its completion the line to be worked as the property of the Company, or to become an integral part of the Oudh and Rohilkhand Railway system, and come under the same conditions as regards interest, division of profits, &c. The Government to have the power of purchase on 1st January 1900, or on any subsequent tenth year, by repayment of the capital expended.

### No. 3.

No. 70 G., dated 28th June 1888.

From—Major General C. C. JOHNSTON, Managing Director, Oudh and Rohilkhand Railway Company, Limited,

To—The Under-Secretary of State for India.

In continuation of the Board's letter No. 52 G., dated the 9th May last, and with reference to their No. 139 G. of the 24th October 1884, forwarding copy of a note by Colonel Luard, with other documents, relating to the establishment of a new communication by rail between Upper India and Calcutta by an extension of the Oudh and Rohilkhand system from Benares, I have the honour, by desire of the Board, to submit the accompanying memorandum by Sir Bradford Leslie, with sketch map, proposing an alternative route, which has received their favourable consideration; and I am to point out that the present scheme not only affords a double communication between Calcutta and the North-West Provinces and the frontier, but contains in itself undoubted prospect of success.

2. The Board, in their reports and through the voice of their Chairman at general meetings, have never ceased to advocate for the security of the Indian Empire the absolute necessity of a second line of communication to and from Calcutta, and have drawn attention from time to time to the disasters that might ensue even from a temporary failure, through accidents to bridges,

embankments, or other causes, on the East Indian Railway. They avail themselves of this opportunity of impressing upon the Secretary of State how seriously the security of Imperial tenure is imperilled by trusting to one source of communication.

3. The new line proposed in Sir Bradford Leslie's memorandum possesses this advantage over the one advocated by Colonel Luard, that it would afford more direct communication between Calcutta and the most important and most valued provinces of India, both commercially and politically.

4. The Board have already on many previous occasions stated their readiness—even more, their anxious readiness—to co-operate with the Secretary of State in carrying out extensions on the construction system which, after the most mature and careful consideration, they have adopted in face of much opposition, a system which, in regard to “road,” facts prove to be the most perfect in India. As regards the corrugated steel sleepers, renewals are *nil*, and it seems probable that they will last for an indefinite period.

5. The Board have already put before the Secretary of State the terms on which they would be prepared to recommend to their proprietors that the present or any new extension should be worked, and, in abiding by these conditions they reiterate their willingness to co-operate with Government to continue working the existing system or to carry out extensions on such terms as may be agreed upon, provided they be made acceptable to their present *clientele* or to the investing public generally.

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Dated 11th June 1888.

Memo. by Sir BRADFORD LESLIE.

The proposed extension of the Oudh and Rohilkhand Railway to Howrah and Calcutta would run from Mogul Serai *viâ* Sasseram, Gya, Baidyanath, Sooree, Ahmoodpore, Cutwa, Nuddea, and Kulna, to a junction with the East Indian Railway at Hooghly, affording communication with Howrah, and *viâ* the Jubilee Bridge with Calcutta.

2. The total distance from Mogul Serai to Howrah would be 450 miles, but the actual length of railway to be constructed would be 425 miles, and the cost, including stock for local traffic, Rs90,000 per mile; total, say Rs382½ lakhs, or 2,550,000*l.* sterling.

3. Excepting the bridge over the Sone river, there would be no works of extraordinary magnitude.

4. It is believed that the gradients would not be less favourable than on the East Indian Railway.

5. The proposed line would connect the three chief places of Hindoo pilgrimage, Benares, Gya, and Baidyanath, by a direct route, saving the pilgrim traffic a detour of 150 miles *viâ* Patna, and avoiding the changing carriages at Patna, a most troublesome ordeal to zenana females; and, while keeping clear of the difficult gradients of the Hazaribagh District, the line would serve the northern flank of the Chota-Nagpur plateau, the great recruiting territory for the coolie labour of Assam, the Mauritius and the West Indies.

6. The proposed line would also afford the most direct route between the great rice-producing districts of Beerbhoom and Burdwan and Benares. The consumption of rice in the North-West Provinces and the Punjab is steadily increasing, and this is certain to be a very valuable traffic. The proposed line would further fulfil a great want in providing the important towns of

Cutwa, Nuddeah, and Kulna with railway communication with Calcutta, Howrah, and Upper India.

7. In normal seasons the average through goods traffic between Benares and Howrah is not less than 100,000 tons per annum; and this traffic, which would properly belong to the extension of the Oudh and Rohilkhand Railway, is certain to increase, consequent on the opening of the Dufferin Bridge.

8. At the average rate of earnings on the East Indian Railway, 100,000 tons carried 450 miles would produce 14 lakhs of rupees.

9. The local goods traffic from the rich producing districts of Behar and Shahabad, fertilized by the Sone irrigation canals, would be very valuable. There would also be a large traffic in lime from Rhotasgurrh, which would probably supersede the Kutni and Sylhet line in the Calcutta market. The rice traffic between Ahmoodpore and stations below, and Benares, already referred to, would be another source of revenue, and the portion of the line running through the Burdwan and Nuddea districts would contribute a fair amount of goods traffic both up and down. On the whole, the local goods traffic may be assumed at not less than Rs50 per mile per week.

10. The passenger traffic of the proposed line affording an absolutely direct route both from Upper India and Lower Bengal to the much frequented shrines of Baidyanath, Gya, and Benares, and also affording the natural outlet for the coolie emigration traffic of Chota-Nagpore, cannot fail to be very heavy; there will further be a very large local passenger traffic between Kutwa and stations below and Calcutta. The average receipts of the East Indian Railway from passenger traffic are not less than Rs160 per mile per week, and on the Bengal Division are very much greater, so that it may be very safely assumed that the passenger traffic of the proposed line will be at least Rs100 per mile per week; making Rs150 per mile per week as the total local traffic of the proposed line.

11. This, which is considerably less than the traffic of the Patna-Gya and Tarkessur branches of the East Indian Railway, is a very low estimate.

12. Rs150 per mile per week would give Rs33 lakhs per annum, on the 425 miles between Mogul Serai and Hooghly, making, with the through goods traffic, a total of 47 lakhs.

13. With working expenses at 40 per cent. and considering the advantage of being part of a large concern, and of cheap fuel from the Bengal coal-fields, they should not exceed this ratio, a traffic of Rs47 lakhs would yield a net profit of Rs28 lakhs, equal to  $7\frac{1}{2}$  per cent. on the capital outlay of Rs38 $\frac{1}{2}$  lakhs.

14. But it will be said all this traffic is to be taken from the East Indian Railway. This, however, is not the case, the only traffic taken from the East Indian Railway would be the Rs14 lakhs of through goods between Benares and Howrah, and some portion of the pilgrim traffic; on the other hand, the East Indian Railway would benefit by the carriage of the material for the proposed line, and by the interchange of traffic with that line at Hooghly, Ahmoodpore, Baidyanath, Gya and Mogul Serai, and it is probable that the new traffic thus developed would more than compensate for the loss of the through goods between Mogul Serai and Howrah.

15. The East Indian Railway follows the course of the Ganges, which forms the northern boundary of what is called Western Bengal, a territory of 60,000 square miles, with 22,000,000 of inhabitants, and it cannot be contended that this large country is adequately served by the 700 miles of the East Indian Railway, which runs hundreds of miles away from some of its most fertile tracts. The East Indian Railway yields a net Revenue of Rs313 lakhs per annum, equal to an average profit of  $8\frac{1}{2}$  per cent. between Delhi and Howrah, and on the

Bengal division the profit must be over 12 per cent per annum, so that it may well afford to spare a few lakhs in the interests of the vast outlying districts and of trade generally, which can only be properly served by a second line.

16. In the event of the East Indian Railway being breached by an extraordinary flood above Lucki Serai, the relief afforded to the East Indian Railway by an alternative route for its traffic, even for a few weeks, would compensate for any loss of traffic it might sustain for many years.

17. The proposed line would also include a branch of 56 miles in length through the Sontal District to Bhagulpore, and a branch of 40 miles to Bhagwangola, both of these branches would serve fertile and populous districts hitherto unprovided with railway communication, and would be remunerative additions to the project, but to simplify the matter, the present memorandum deals only with the question of the extension of the Oudh and Rohilkhand Railway from Mogul Serai to Hooghly.

18. By arrangement with the Bengal and North-Western Railway Company the proposed line might, at an inconsiderable increase of expenditure, provide space on its road bed and at stations for the metre-gauge railway from Gya to Hooghly. It would then only remain for the Bengal and North-Western Railway to lay their line from Bankipore to Gya, and thence along the proposed line to Howrah to get direct access to Calcutta.

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### No. 4.

No. 1479, dated 23rd December 1887.

From—T. W. Wood, Esq., Secretary, Bombay, Baroda and Central India Railway,

To—The Under-Secretary of State for India.

My Directors learn from the half-yearly report recently issued by the Directors of the Oudh and Rohilkhand Railway Company that the Secretary of State has notified to that Company his intention to exercise, during next year, the right vested in him, under contract, of purchasing the Oudh and Rohilkhand Railway.

My Directors desire me now, therefore, to represent, for the consideration of the Secretary of State, that the opportunity of the transfer of the Oudh and Rohilkhand Railway from the hands of the owning Company to the State might with great advantage to the traffic of the north-west, and of the metre-gauge system of lines worked by this Company for Government, be taken to establish a metre-gauge connection between Cawnpore and Lucknow.

This extension of the metre gauge is the only link necessary to directly connect the Rajputana-Malwa Railway system with the Lucknow-Sitapur State Railway, both of metre gauge.

My Board trust that the Secretary of State will see fit to press upon the Government of India the desirability of thus linking in two systems of railway of the same gauge, and now separated by so short a distance as the 40 miles between Lucknow and Cawnpore.

The Board have reason to believe that this connection will be of considerable service in developing the Sambhur salt trade, and also the large import trade into Rajputana of sugar and rice, the product of the districts bordering the Gogra river.

If desired, my Board will be prepared to work the metre-gauge service between Cawnpore and Lucknow, and on the Lucknow-Sitapur State Railway, on suitable terms, to be agreed on with the Secretary of State.



They will also, I am to add, be prepared, in the event of such working being entrusted to them, to allow the cost of laying down the third rail necessary to establish the metre-gauge connection between Cawnpore and Lucknow (which should not exceed 40,000*l.*), to form part of the capital of the Cawnpore-Achnera State Railway.

### No. 5.

No. 66, dated 15th May 1888.

From—A. P. DUNSTAN, Esq., Secretary, East Indian Railway Company,  
To—The Under-Secretary of State for India.

Referring to the Directors' letter No. 64, of the 10th instant, in which they forwarded, at the suggestion of Sir Juland Danvers, copy of a memorandum prepared by the Chairman with reference to the Oudh and Rohilkhand Railway, and stated that they would place their views on the subject before the Secretary of State in an official form in the course of a few days, I am now instructed to say that circumstances have so far changed since the memorandum was written as to require that the illustrative schedules appended to it shall be considered obsolete; and, moreover, that the audited accounts of the closing half-year of 1887 having been received for both Companies, it is desirable that the proposition should be based on the figures of that year.

The proposal now made by the Directors, subject to the consent of the deferred annuity holders, embodies the main principle of the Chairman's memorandum, so far as regards the unification of the management, and a prolongation of the term of the existing contract, embracing other suggestions as set out in the following "memorandum of terms," *viz.* :—

1. A working union of the two systems, from the 1st January 1889, with one account, under the management of the East Indian Railway Company.
2. An extension of the present lease of the East Indian Railway, now terminable on the 31st December 1899, for a further fixed term of 15 years from that date, to include the working of the Oudh and Rohilkhand Railway during the same period.
3. The annual payment by the undertaking to the Government of the sum of Rs1,35,248-8-8, being the net earnings of the Oudh and Rohilkhand Railway for the year 1887.
4. The charge of interest on the East Indian Railway stores balance to cease to be made, for reasons hereinafter explained.
5. The Company to concede to the Government one-half of the balance of its share of the surplus profits, after it shall have received six per cent., including the guaranteed interest of four per cent. on the capital representing the deferred annuity.

I am instructed to forward explanatory schedules marked "1," "2," "3," and "4;" the difference between "1" and "2" consisting in the omission from the latter of the charge for interest on stores; "3" being a computation of the result to the Government of a working union of the East Indian and Oudh and Rohilkhand Railways; and "4" showing the annual money value to the Government of the working of the undertaking under the present contract.

At present the undertaking of the East Indian Railway is charged interest on the stores twice over; once in the original annuity, the charge of which is borne by the undertaking; and again as interest at 4½ per cent. on the half-yearly stores balances. The Directors would demur to enter into a similar

arrangement in respect to the Oudh and Rohilkhand stores; and as it would be impossible to keep the two store accounts distinct, they think that the present would be a suitable occasion for revising the arrangement with the East Indian Railway, by discontinuing the charge altogether. It must be borne in mind that four-fifths of the amount of the interest remitted would accrue to the Government in the increase of the divisible surplus.

Looking to the large reduction assumed in the working expenses of the Oudh and Rohilkhand Railway, and to the growing tendency, under pressure of many circumstances, to reductions in freight charges, Schedule "1" shows a computation of prospective advantage hardly sufficient to satisfy the reasonable expectation of the Company; but if the charge in respect of the stores be eliminated in the future (Schedule "2"), the Directors think that the balance of profit would be sufficiently enhanced to induce its acceptance by the deferred annuity holders.

The Directors, of course, understand that, as in the case of the agreement for the working of the East Indian Railway in 1879, so in the agreement which would be necessary for the working of the Oudh and Rohilkhand, the Government would take powers in respect to the rates and fares to be charged; and they are of opinion that such powers are infinitely more effective in safeguarding the interests of the public than what is ordinarily called "competition," the effect of which is not only less beneficial to the country, but is ruinous to the interests as well of the Companies as of the Government, on whom, as the guarantor, the loss in all cases must ultimately fall.

By these methods of arrangement, it appears to the Directors that the Oudh and Rohilkhand Railway might be worked with advantage to the Government; whilst by the division of the Company's share of the surplus profits over 6 per cent., any fear that the Company would gain unduly would be obviated.

## ENCLOSURES IN No. 5.

## No. 1.

Estimated Net Revenue Account of the East Indian and Oudh and Rohilkhand Railways combined, based on the returns for the year 1887; the Working Expenses of the Oudh and Rohilkhand Railway being calculated at 45 per cent. of the gross earnings (as against an actual charge for that year of 52·82 per cent.), and the interest on the following items being continued at  $4\frac{1}{2}$  per cent. per annum, *viz.* :—

1. E. I. R. overdrawn capital to 31st December 1879.
2. „ Debentures paid off.
3. „ Capital Account.
4. „ Capital Advance Account.
5. „ Stores.

A sum of Rs31,35,248-8-8, being the actual net earnings of the Oudh and Rohilkhand Railway during 1887, is entered as the payment to be made to Government by the Undertaking in respect of the Oudh and Rohilkhand Railway capital; and interest on Oudh and Rohilkhand Railway stores at  $4\frac{1}{2}$  per cent. per annum (Rs1,29,824-7-6) is provided for.

Exchange at 1s. 4d. per rupee.

1887.

Net receipts—	R	a. p.	R	a. p.
E. I. R.				
(Working expenses 31·74 per cent.)	3,23,28,651	3 6		
Oudh and Rohilkhand Railway	36,55,417	4 3		
(Working expenses 45 per cent.)			3,59,84,068	7 9

	R	a.	p.
Old capital charges :			
Interest at $4\frac{1}{2}$ per cent. per annum on—			
E. I. R. Debenture Stock . . . 1,500,000l. ....	10,12,500	0	0
£			
Annuity . . . . . 1,473,750			
Less amount deferred in respect of 6,550,000l. capital, at $4\frac{1}{2}$ per cent. per annum . . . . . 294,750	£ 1,179,000	1,76,85,000	0 0
		1,86,97,500	0 0
Interest at 4 per cent. per annum on—			
Deferred annuity capital . . . . .	39,30,000	0	0
		2,26,27,500	0 0
New capital charges :			
Interest at $4\frac{1}{2}$ per cent. per annum on—			
E. I. R. overdrawn capital to 31st December 1879 . . . . .	1,19,037	1	4
„ debentures paid off . . . . .	15,96,007	9	6
„ Capital Account . . . . .	5,72,369	4	0
„ Capital Advance Account . . . . .	3,61,188	2	10
„ and O. and R. R. stores combined—			
E. I. R. . . . .	3,00,285	3	8
O. and R. R. . . . .	1,29,824	7	6
		4,30,109	11 2
		2,57,06,211	12 10
Payment to Government by the Undertaking in respect of O. and R. R. capital . . . . .	31,85,248	8	8
Contributions to Provident Institution . . . . .	3,59,840	10	11
		2,92,01,301	0 5
Balance of surplus profits—			
Government share $\frac{2}{3}$ ths . . . . .	54,26,213	15	6
Company's $\frac{1}{3}$ th . . . . .	18,56,533	7	10
		67,82,767	7 4
		3,59,84,063	7 9
Surplus profits of the amalgamated Undertakings computed at . . . . .	67,82,767	7	4
Surplus profits of the E. I. R. Undertaking for the year 1887 . . . . .	64,28,977	6	0
Gain to the E. I. R. Undertaking—			
Government share, $\frac{2}{3}$ ths . . . . .	2,83,032	1	1
Company's „ $\frac{1}{3}$ th . . . . .	70,758	0	3
		3,53,790	1 4

## No. 2.

Estimated Net Revenue Account of the East Indian and Oudh and Rohilkhand Railways combined, based on the returns for the year 1887; the Working Expenses of the Oudh and Rohilkhand Railway being calculated at 45 per cent. of the gross earnings (as against an actual charge for that year of 52.82 per cent.), and the interest on the following items being continued at  $4\frac{1}{2}$  per cent. per annum, viz. :—

1. E. I. R. overdrawn capital to 31st December 1879.
2. „ Debentures paid off.
3. „ Capital Account.
4. „ Capital Advance Account.

A sum of Rs1,35,248-8-8, being the actual net earnings of the Oudh and Rohilkhand Railway during 1887, is entered as the payment to be made to Government by the Undertaking in respect of the Oudh and Rohilkhand Railway capital.

Exchange at 1s. 4d. per rupee.

1887.

Net receipts—

	R	a. p.	R	a. p.
E. I. R. . . . .	3,23,28,651	3 6		
(Working expenses 31·74 per cent.)				
O. and R. R. . . . .	36,55,417	4 3		
(Working expenses 45 per cent.)			3,59,84,068	7 9

Old capital charges :

Interest at  $4\frac{1}{2}$  per cent. per annum on—

E. I. R. Debenture Stock, 1,500,000l. . . . . 10,12,500 0 0

£

Annuity . . . . . 1,473,750

Less amount deferred in respect of  
6,550,000l. capital, at  $4\frac{1}{2}$  per cent.

per annum . . . . . 294,750

£

1,179,000 1,76,85,000 0 0

1,86,97,500 0 0

Interest at 4 per cent. per annum on—

Deferred annuity capital . . . . . 39,30,000 0 0

2,26,27,500 0 0

New capital charges :

Interest at  $4\frac{1}{2}$  per cent. per annum on—

E. I. R. overdrawn capital to 31st December 1879 . . . . . 1,19,037 1 4

„ Debentures paid off . . . . . 15,96,007 9 9

„ Capital Account . . . . . 5,72,369 4 0

„ Capital Advance Account . . . . . 3,61,188 2 10

2,52,76,102 1 8

Payment to Government by the Undertaking in respect of O. and

R. R. capital . . . . . 31,35,248 8 8

Contributions to Provident Institution . . . . . 3,59,840 10 11

2,87,71,191 5 3

Balance of surplus profits—

Government share,  $\frac{2}{3}$ ths . . . . . 57,70,301 11 7

Company's share,  $\frac{1}{3}$ th . . . . . 14,42,575 6 11

72,12,877 2 6

3,59,84,068 7 9

Surplus profits of the amalgamated Undertakings computed at . . . . . 72,12,877 2 6

„ „ of the E. I. R. Undertaking for the year 1887 . . . . . 64,28,977 6 3

Gain to the E. I. R. Undertaking—

Government share,  $\frac{2}{3}$ ths . . . . . 6,27,119 13 3

Company's share,  $\frac{1}{3}$ th . . . . . 1,56,779 15 3

7,83,899 12 6

These net receipts, converted in sterling at 1s. 7<sup>3</sup>/<sub>4</sub>d. the average, during the whole term, of the official rates of exchange, that is to say, of the rate annually settled between the Secretary of State and Her Majesty's Treasury, are the equivalent of . . . . . £ s. d.

19,670,698 13 2

Out of these net working receipts have been paid :—

1st. The annuity under the Purchase Act, and all interest on debentures and debenture stock, on debentures paid off, and on overdrawn capital . . . . .

£ s. d.  
13,144,223 12 2

2nd. Interest on moneys advanced on outlay for capital purposes . . . . .

309,364 10 8

3rd. Interest on value of stores in hand . . . . .

252,232 2 2

4th. Contribution to Provident Fund . . . . .

207,954 14 9

13,913,774 19 9

Leaving for net profit . . . . . 5,756,923 13 5

Of which—

The Government of India have received . . . . . 4,605,471 3 5

The Railway Company . . . . . 1,151,452 10 0

5,756,923 13 5

#### EAST INDIAN RAILWAY COMPANY.

*Statement "B" showing in rupees the actual outcome of the working of the East Indian Railway Undertaking for the eight years, 1880 to 1887 inclusive, under the provisions of the Purchase Act, 1879, and the Contract of the 22nd December 1879.*

The revenue receipts from all sources during the term were . . . . . R a. p.  
The working expenses under all heads were . . . . . 12,99,70,729 3 4

Or 34<sup>7</sup>/<sub>9</sub> per cent. of receipts.

*Note.*—The working expenses include the cost, amounting to Rs. 38,44,874-11-6, equal to 2<sup>9</sup>/<sub>58</sub> per cent. of the working charges of replacing 151 locomotives (and 59 tenders) of the old type by the same number of much more powerful engines of a modern type.

The net receipts were therefore . . . . . 24,35,52,849 8 2

Out of these net working receipts have been paid :—

1st. The annuity under the Purchase Act, and all interest on debentures and debenture stock, on debentures paid off, and on overdrawn capital . . . . .

R a. p.  
16,28,46,762 0 5

2nd. Interest on moneys advanced on outlay for capital purposes . . . . .

39,28,900 12 2

3rd. Interest on value of stores in hand . . . . .

31,00,488 14 5

4th. Contribution to Provident Fund . . . . .

25,85,572 11 8

17,24,61,724 6 8

Leaving for net profit . . . . . 7,10,91,125 1 6

Of which—

The Government of India have received . . . . . 5,68,72,012 6 9

The Railway Company . . . . . 1,42,19,112 10 9

7,10,91,125 1 6

## No. 6.

No. 10, dated 20th January 1880.

From—T. R. WATT, Esq., Managing Director, Indian Midland Railway Company, Limited,

To—The Under-Secretary of State for India.

This Board having become aware that notice has been given to the Oudh and Rohilkhand Railway Company of the intention of the Secretary of State to purchase that line, I am desired to submit, for the consideration of the Secretary of State, in connection with the future working thereof, that this Board is of opinion that great public advantage would be obtained were part of the line from Cawnpore to Lucknow (44 miles) made over to this Company (upon terms to be arranged), and incorporated with the Indian Midland Railway system.

The railway distance between Bombay and Cawnpore, by the Midland route, as compared with that *via* Allahabad, will be reduced by about 134 miles. It is anticipated that a large traffic with Bombay in grain, seed, and other produce will be obtained from Cawnpore and from the districts in Oudh and Rohilkhand through Lucknow. This latter traffic could be worked more effectively and economically from Lucknow as a terminus than from Cawnpore; and the public interests would be more beneficially served by having available a through system on the broad gauge, worked by one Company, connecting the whole of Central India with Lucknow.

The Board feel that it would be premature to enter upon the financial side of the question. As relates to the provision of the capital that may be required in such an arrangement, they desire in the first instance to submit the proposal in principle for the consideration of the Secretary of State, strongly urging upon him its acceptance, and with the assurance that if it be entertained they will be prepared to give the terms he may set out their most careful consideration.

## No. 7.

No. 141, dated 4th July 1888.

From—SIR JOHN E. GORST, Under-Secretary of State for India,

To—T. R. WATT, Esq., Managing Director, Indian Midland Railway Company, Limited.

I am directed to inform you that your letter, No. 10, of the 20th January 1888, suggesting that, on the purchase by the State of the Oudh and Rohilkhand Railway, a portion of that line from Cawnpore to Lucknow should be made over and incorporated with the Indian Midland Railway Company, was duly received and laid before the Secretary of State for India in Council.

I am now directed to acquaint you that the Secretary of State in Council has decided that the Oudh and Rohilkhand Railway shall in its entirety remain in the hands of the Government of India upon its purchase in January next.

I am to add that a copy of your letter and of this reply will be forwarded for the information of the Government of India.

## No. 8.

No. 353, dated 9th January 1888.

From—E. L. MARRYAT, Esq., Secretary, Rohilkhand and Kumaon Railway Company, Limited,

To—The Under-Secretary of State for India.

Having learnt that the Oudh and Rohilkhand Railway lease is to be terminated at the end of the year, and also that the Bengal and North-Western

Railway Company have written to the Secretary of State to suggest that a connection should be established between the Bengal and North-Western Railway metre-gauge system and the Railways on the same gauge in Rajputana, I am directed to intimate, for the consideration of the Secretary of State, that this Company will be happy to join in any scheme on suitable conditions for connecting the Railways above named by a line running from Delhi, *vid* Moradabad and Rampur, to Bhogapur, the junction of this Company's line with the Bareilly-Pilibhit State Railway, and for the prolongation of that Railway to the northern terminus of the Lucknow-Sitapur Railway, a prolongation that has already secured favourable consideration from the local authorities. The accompanying map shows the links in the metre-gauge system north and south of the Ganges that it is now proposed to fill up.

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### No. 9.

No. 216, dated 3rd January 1888.

From—E. L. MARRYAT, Esq., Secretary, Bengal and North-Western Railway Company, Limited,

To—The Under-Secretary of State for India.

With reference to correspondence ending with India Office No. 1795 P. W. of 20th October last, I am directed to suggest, for the consideration of the Secretary of State, that advantage should be taken of the transfer of the Oudh and Rohilkhand Railway to the State to lay in a third rail on the metre gauge between Lucknow and Cawnpore, and thus establish connection between the Sitapur and Lucknow Railway and the Cawnpore-Achnera Railway and Rajputana system.

There will then only remain a length of some 50 miles to be constructed, estimated by thi Company's Chief Engineer to cost some 50 to 55 lakhs of rupees in order to join up the metre-gauge systems of the east and west of India,\* and this Company will be happy to enter into negotiations with the Secretary of State for the construction of this important link on suitable terms.

\* Bengal and North-Western Railway.  
Tirhoot.  
Assam-Bihar.

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### No. 10.

No. 617, dated 30th April 1888.

From—E. L. MARRYAT, Esq., Secretary, Bengal and North-Western Railway Company, Limited,

To—The Under-Secretary of State for India.

With reference to correspondence ending with your No. 1795 P. W. of 20th October 1887, I am directed by the Board to inquire whether the Secretary of State is prepared to enter into negotiations for the construction by a new Company without a guarantee of the following lines of Railway in the North-West Provinces.

The lines to be a broad-gauge railway from Benares, on the Oudh and Rohilkhand Railway, to Lucknow *vid* Roy Bareilly, with branch to Cawnpore, and other branches as may be agreed upon between the Secretary of State and the Company.

The mileage will be somewhat as follows :—

	Miles.
Benares to Lucknow . . . . .	180
Roy Bareilly to Cawnpore { To be carried out when money can be raised on debentures on favour- able terms . . . . . }	65
Other branches, say . . . . .	105
<b>TOTAL . . . . .</b>	<b>350</b>

The terms generally to be Bengal and North-Western Railway terms, except that the following words near the end of the purchase clause (57) shall be omitted, namely, "and share of surplus (if any) belonging to the Secretary of State under the fifth sub-section of the 39th section of the contract."

On completion of the line from Benares to Lucknow the working of the Oudh and Rohilkhand Railway to be handed over to the New Company, on the following conditions :—

1st.—The net earnings of the Oudh and Rohilkhand Railway as far as available in each year to be distributed as follows :—

(a) In payment in sterling in London to the Secretary of State of the sum the Government may have to pay annually on account of the obligations incurred in the acquisition of that Railway, as well as interest at three per cent. per annum on such further sums as may have been or have to be from time to time expended on its improvement and extension from the date it is taken over by the Government.

(b) After payment of these sums the surplus to be divided as follows :—

Four-fifths to the Secretary of State.

One fifth to the New Company.

2nd.—All capital required for the improvement or extension of the Oudh and Rohilkhand Railway to be provided by the Secretary of State.

The Government will by this means secure 350 miles of new railway, in a rich and populous district which much requires to be opened up, without incurring any liability or risk whatever.

The density of the population in the districts to be served by the proposed railway varies from 500 to 800 per square mile.

## No. 11.

No. 628, dated 13th June 1888.

From—E. L. MARRYAT, Esq., Secretary, Bengal and North-Western Railway Company, Limited,

To—The Under-Secretary of State for India.

With reference to this Office letter, No. 216, of 3rd January 1888, I am directed to submit, for the information of the Secretary of State for India, a copy of a memorandum\* by the Agent of this Com-

\* Copies can be obtained in India.

pany on the best means of connecting the Bengal and North-Western Railway with the metre gauge lines to the south of the Gogra and Ganges rivers.

Without at present going into the question of the respective merits of the alternative routes proposed, I am to suggest that, in any new arrangements that may be come to for working the Oudh and Rohilkhand Railway, powers



should be reserved by Government for laying a third rail on the metre-gauge, from Byram Ghat to Lucknow, as well as from Lucknow to Cawnpore, as suggested in my letter above referred to.

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## No. 12.

Dated 16th May 1888.

From—Messrs. MATHESON & Co.,

To—The Under-Secretary of State for India.

With reference to the papers published in the *Gazette of India*, dated 20th August 1887, we have the honour to inform you that we have been requested to bring before the Government proposals for the construction of a broad gauge line of railway from Mogul Serai to Burrakur, with branches at Palamow and Gya, as shown on the accompanying plan, and we take the liberty of forwarding herewith a short memorandum pointing out in greater detail some of the advantages of the proposed line.

The line suggested does not entirely follow the route indicated in the *Gazette*, but its advantages are in many respects so considerable that we think they will commend themselves to the judgment of the authorities.

This line will effect a saving of between 60 and 70 miles in the distance from Calcutta to the North-West Provinces, and a reduction in freight of about two rupees per ton on all produce sent to Calcutta from stations above Benares, while at the same time it will open up by its branches the coal-fields of Chota Nagpore.

We estimate the new line will cost about three millions sterling, and it will be seen that it is practically an extension of the present Oudh and Rohilkhand Railway from Benares to Burrakur, with branches at Palamow and Gya, and it would, in our opinion, be greatly to the advantage of both the present Oudh and Rohilkhand system and the new line if both were managed by the same agency. Such an arrangement would effect a material saving in working expenses on both the present and the proposed line, while the branch to Palamow would, by cheapening the supply of coal, effect a considerable reduction on the present working expenses of the Oudh and Rohilkhand Railway.

All experience has proved that, although in the commencement of railway enterprise circuitous routes may be taken to serve important places, sooner or later direct lines will have to be constructed, and we think that an inspection of the maps will show that it would be difficult to find in India one of greater commercial, political, and military importance than that which we have suggested.

We are making this communication on the assumption that what is understood to be the present policy of the Government of India, *viz.*, that no guarantee of interest on capital will be given, is to be maintained. The Bengal and North-Western was constructed on these conditions. The ill success of this issue is well known. The shares were not subscribed by the public. The capital had to be found by the issuing firm and their friends, the shares soon went to a discount, and although some amounts have been slowly absorbed, and the shares are now quoted at par, it is a matter of common knowledge that any quantity can be bought at that price or even a shade under. We are therefore driven to the conclusion that an issue for the purpose stated could not be made with success upon the security of the railway only, without some collateral inducement.

Having regard to the variety of the conditions under which an agreement might be come to for the construction of the line, it is impossible for us, without knowing the views of the Secretary of State, to state now definitely the conditions on which the business could be undertaken, but we submit the following for the consideration of the Secretary of State, as those under which we have reason to believe arrangements could be made for carrying out the enterprise, and it will give us pleasure, either verbally or by correspondence, to furnish any further information with the view of settling a scheme which the Secretary of State can accept and sanction :—

- I.—That all land shown to the satisfaction of Government to be necessary for the construction of the proposed line and station accommodation shall be provided by the Government free of cost.
- II.—That, during the construction of the line, the Company shall be allowed to charge to capital such sums as, with interim receipts, will be equivalent to a dividend of 4 per cent. per annum on the paid up capital of the Company.
- III.—That the management of the present Oudh and Rohilkhand Railway shall be made over to the new Company on completion of the main through line, or sooner should it seem to the Secretary of State advisable, and the whole system from Saharunpur to Burrakur shall thereafter be worked as one undertaking.
- IV.—That the working expenses for the whole system shall be divided between the present iOudh and Rohilkhand line and the new Company in proportion to the mileage of each.
- V.—That the net receipts of the present Oudh and Rohilkhand system, after deducting working expenses, calculated as above, shall be paid to Government, and the net receipts of the new line to the Company.
- VI.—That, should the net receipts of the new Company in any year after the line has been opened for through traffic amount to 75,000*l.*, Government will, in consideration of the services rendered by the Company in managing the Oudh and Rohilkhand Railway, and the advantages that will accrue to that line from the proposed extensions, grant a rebate from the receipts of the present Oudh and Rohilkhand system of a sum sufficient to make up the net receipts on the new lines to 75,000*l.* per annum.

While suggesting the above terms, we desire to point out that assuring a minimum net revenue to the new Company will not, in practice, impose any appreciable pecuniary liability on the Government. The amount is so small that there cannot be any reasonable doubt about its being earned, and upon the information in our possession we shall be much surprised if it is not greatly exceeded. On the other hand, the advantages of the scheme are very great and indeed vital, for we believe it will admit of trust money being invested in the line, which without some such condition could not be done.

This view of the case has not, we believe, received the consideration it deserves. The Government has, by its action during the last 30 years, in giving guarantees for Indian railways, called into existence a condition in trust deeds and settlements which necessitates that such funds, so far as India is concerned, can only be invested in Guaranteed Railways. The adoption of an entirely different policy will, in effect, at once divert from India the large amount of capital held in trust, which is continually seeking investment. The present connection once lost would not readily be recovered, and it has been our desire

in examining this business to devise some plan which, without contravening the rule as to guarantees laid down by the Government of India, would admit of sufficient inducement being offered to trustees and the public to put their money into such undertakings.

[ENCLOSURE IN No. 12.]

### MEMORANDUM.

In the supplement to the *Gazette of India*, published on the 20th August 1887, the following Resolution appeared :—

“The desirability of utilizing the Palamow coal-field for the supply of the railways to the north-west of Mogul Serai has been for many years recognized, and surveys with this object have been made between that field and Baroon, the head of the Sove Canal system, in the year 1876-77. In the course of the investigation regarding railway construction throughout India which took place in 1882, however, it became evident that a larger project was required, which would afford an outlet to the east, as well as the west, for the mineral and agricultural produce of the large province of Chutia-Nagpur, and also that such project might, with the intervention of the contemplated Nagpur Sitarampur Railway, be extended to Cuttack and Ouri, so as to aid by railway transit the vast number of pilgrims who annually visit the latter place, and to afford to the province of Orissa, by direct access from the food supply of Chhattisgarh, an effective protection against famine. The substantial objects of this project have also been well described, as, (1) to provide a quick and easy means of travelling for the army of pilgrims who visit the shrines of Benares, Gaya, and Puri; (2) to open out the resources of large and important tracts of country now almost cut off from communication with the rest of India, to supply them with food if scarcity prevails, or to carry it to other districts if a surplus is available; and (3) to facilitate emigration from overcrowded districts to those which are sparsely inhabited yet capable of supporting a very considerable increase of population.”

2. In the autumn of 1882 the Government of India consequently ordered the commencement of a series of surveys which have been carried on up to the past year, and have embraced all the more promising alternative routes between Benares and Puri.

The result of these investigations has been to establish the fact that the project practically resolves itself into two portions, the one providing for the development of Chutia-Nagpur and aiding the coal supply of Upper India, the other securing the famine protection of Orissa and the opening out of the portions of the Central Provinces and Bengal traversed by the line, but both possessing the object and common interest of facilitating transit of pilgrims to Puri. The two portions become, in fact, separate railways linked by a section of the Bengal-Nagpur Railway now under construction, and by a common interest, but free to be constructed by one and the same, or by two totally distinct agencies. The principal features of each of these portions of the project will now be briefly described.

The Resolution then goes to describe the lines as shown in blue on the accompanying plan, and with regard to the traffic states :—

“It is impossible to present any definite and reliable estimates on this subject in respect of a large tract of country which at present is to a great extent landlocked, unable to export except along country roads and paths by means of carts and pack bullocks, and for the most part devoid of effective stimulus to production. Various estimates of produce and returns will be found among the papers appended to this Resolution, but while they appear for the most part to have been framed with extreme caution, it is impossible to predicate to what extent, if at all, they are likely to be exceeded, and any attempt to do so might only prove misleading. The Government of India are unable to say more than that the coal and other mineral resources of Chutia-Nagpur have been described in the geological writings of Dr. Ball,

Dr. Oldham, Mr. Hughes, and others, as also in recent articles in the *Indian Engineer*; that the trade has been analyzed with much care and local knowledge by Mr. H. H. Risley, of the Bengal Civil Service, whose note is appended; and that the pilgrim traffic is an important factor, the extent or expansion of which it is equally difficult to ascertain and foresee."

From the above it will be seen that the published papers leave the question of probable profits very vague, and there are no facts given in the Resolution or papers attached which would induce the public to invest capital in the undertaking.

The lines will be useful for the armies of pilgrims who visit the shrines of Benares, Gya, and Dacca; they will open up new country and be a great protection against famine, they will facilitate emigration from over-crowded districts to districts which are sparsely inhabited, but from a commercial point of view there is nothing to show that they will be a financial success.

The project is divided into two sections, one, providing for the development of the Palamow coal-fields and the districts of Chota-Nagpore, while the other opens up through railway communication with the province of Orissa. It is with the first section of the project that we at present wish to deal. This line as laid down, runs from Mogul Serai by Sasseram and Dalton-Gunj to Peruli, with a branch line to Gya. It will serve to open up the Palamow coal-fields, and may develop the mining resources of Chota-Nagpore, but the traffic which it is likely to develop or attract is not apparently sufficient to enable the Government to hold out any prospect of an immediate return from the line sufficient to pay a fair rate of interest on the capital that would have to be invested in its construction. In fact, Mr. Risley, on whose report the Government of India seems chiefly to rely, states in the summary of his report,—“No materials exist for framing even a probable estimate of the quantity or value of the exports or imports of the Chota-Nagpore division.” But while the project reported on by the Government of India is not one that is likely to be financially successful, a line direct from Mogul Serai to Shergotty, with branches to Palamow and Gya (as shown in red on the map), would afford such important facilities to the through trade between Bengal and the Upper Provinces that it could not fail to be at once remunerative and successful from a commercial point of view, while it would afford to the Chota-Nagpore district almost as great facilities as the line suggested in the Government Resolution. This line would at once become the through route between Bengal, Benares, and Gya. It would shorten the distance between Calcutta and all stations above Benares by about 65 miles, and cheapen the carriage on all articles of export from the Upper Provinces to Calcutta by about two rupees per ton. For the pilgrim traffic it would be quite as convenient as the line from Palamow to Purulia, while the branch from Baroon to Palamow would be more direct for the coal traffic than the line suggested in the Government Gazette. The expense in bridging the Sone at Baroon seems to have led to the adoption of the line from Sasseram up the Sone Valley, but the Sone Bridge at Baroon, although a work of considerable magnitude, is not one of any difficulty, and it is doubtful whether the cost of the longer line, with bridges across the Sone and Koel, will not be as great for the direct line, including the bridge at Baroon. In letter No. 623 R., dated the 30th March 1887, from Government of Bengal, it is stated :—

“It appears to the Lieutenant Governor, however, that once the construction of the Gya-Palamow section has been decided on, it will be at least worthy of consideration whether the problem of bridging the Sone river near the Grand Trunk road, and of the construction of the Mogul Serai route through Sasseram direct to Shergati, had not better be faced. The bridging of a river of the magnitude of the Sone

is, in these days, a matter of much less difficulty than formerly, and it is probable that by this arrangement the exit of the coal, both towards Patna and towards Mogul Serai, would be most economically provided for, and the line to Sasseram would have the remote, but still tangible, advantage of lying on the direct route for the possible future alternative railway running as a chord from Mogul Serai to Burrakur, a question which there appears to be a growing tendency to reopen."

With reference to this suggestion the Government of India remarks :—

"A suggestion has been made that the line might be shortened greatly by proceeding direct from the coal-fields to the Sone, and facing the difficulties of a large bridge there, to the cost of which the saving by less distance and avoiding a bridge over the Koel would be a material set-off. This suggestion might be investigated whenever the railway was taken in hand."

In any case, the advantages to be gained by the direct line are so great that they would more than compensate for any additional expense that may have to be incurred. This direct line would secure the whole of the pilgrim and passenger traffic between Bengal and all stations above Benares, both on the East Indian and Oudh and Rohilkhand systems, and if it did not secure the whole of the through goods traffic of the East Indian in addition to what it would receive from the Oudh and Rohilkhand, it would on account of the shorter lead be in a position to compete with the East Indian on terms which could not fail to be of immense advantage to the country generally.

Objections may be taken to the construction of the proposed chord line on the ground that it will become a formidable opponent to the East Indian Railway. But in reply to this we would point out that the new Indian Midland will soon be competing with the East Indian Railway for the traffic of Upper India, and every reduction that can be made on the through rates between Cawnpore and Calcutta will assist the East Indian in maintaining and developing its through traffic to Calcutta. It is manifestly better for the East Indian system to have its through traffic diverted for a short distance over the proposed new line than to lose it altogether, as it would do if diverted by the new Indian Midland to Bombay. But there is another consideration which would materially affect the East Indian system, and probably fully compensate it for any loss that would accrue from the through traffic being diverted to the new chord line. This line would practically be an extension of the Oudh and Rohilkhand system from Benares to Burrakur, and if the Oudh and Rohilkhand and the proposed extension were worked by the same agency, all their efforts would be directed to providing such facilities for the export traffic from Oudh as would tend to induce exporters to send it over the extension to Burrakur, where it would all be thrown on the East Indian Railway for transport to Calcutta. Whereas if the Oudh and Rohilkhand is worked by an agency, with no interest in any line south of the Ganges, it will not be a matter of great importance to them whether the traffic leaves Oudh at Cawnpore or Benares, and if at the former, it may there take the new line to Bombay instead of the East Indian Railway to Calcutta.

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Dated 25th July 1888.

From—Messrs. MATHESON & CO.,

To—The Under-Secretary of State for India.

We have the honour to acknowledge receipt of your letter No. 357 P. W. of the 4th instant, in which you inform us that the Oudh and Rohilkhand Railway will, on its purchase being completed by the Secretary of State on the 1st of January next, be retained and worked by Government as a State line.

This decision having been come to regarding the future working of the Oudh and Rohilkhand system, we assume that the proposal that the entire system should be worked by the managers of the proposed new line falls to the ground. But the reasons for working the Oudh-Rohilkhand and the Mogull Serai-Burra-kur line, under one management, remain as strong as ever.

We therefore beg to suggest that the arrangements for constructing the new line (with the addition of consequential changes needed to meet the altered case) remain as before, but that it should, upon completion, be worked by the Government in conjunction with the Oudh-Rohilkhand. The advantages to the Oudh-Rohilkhand of this scheme are so manifest that it is quite unnecessary to dilate upon them. We would merely ask that if at any time the Government should prefer to make over the working of the Oudh and Rohilkhand to private management, the Directors of the Mogul Serai-Burrakur line may have the option of undertaking it.

It may be convenient if we repeat the conditions which we think will be found suited to the modified arrangement.

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ENCLOSURE IN ABOVE.

CONDITIONS.

I. That all land shown to the satisfaction of Government to be necessary for the construction of the proposed line and stations be provided by Government free of cost.

II. That, during the construction of the line, the Company be allowed to charge to capital such sums as, with interim receipts, will be equivalent to a dividend of 4 per cent. per annum on the paid up capital of the Company.

III. That the new lines, on completion, be taken over by Government, and worked through the agency of the Oudh and Rohilkhand State Railway system.

IV. That the working expenses for the whole system shall be divided between the present Oudh and Rohilkhand line and the new Company, in proportion to the mileage of each.

V. That the net receipts of the present Oudh and Rohilkhand system, after deducting working expenses, calculated as above, shall be paid to Government, and the net receipts of the new lines to the Company.

VI. That, should the net receipts of the new Company in any year after the line has been completed and opened for through traffic not amount to 75,000*l.*, Government will, in consideration of the saving in working expenses and other advantages accruing to the Oudh and Rohilkhand system from the proposed extensions, pay from the receipts of the Oudh and Rohilkhand Railway a sum sufficient to make up the net receipts on the new lines to 75,000*l.* per annum.

VII. That, should the net receipts on the new line exceed 6 per cent. per annum on the capital, the balance be divided equally between Government and the Company. This condition to be contingent on the granting of No. VI.

VIII. That Government shall have the option of taking over the new lines after twenty-five years, and at intervals of ten years, thereafter, on giving to the Company twelve months' notice of its intention so to do, and paying a sum equal to twenty-five times the average receipts of the Company during the preceding five years.

IX. The Company, on their part, to undertake—

(A) That the line will be constructed throughout on the 5 ft. 6 in. gauge, and up to the standard of the Oudh and Rohilkhand or East Indian Railway, and maintained for one year after completion.

- (B) That they will provide all funds required for additions to block, to meet development of traffic, and for the construction of any additional branch lines that it may be mutually agreed upon between Government and the Company as desirable to construct, or to meet any unforeseen contingencies debitable to capital account.

X. It is assumed that, under the arrangement for working above proposed, the rolling stock will be used indiscriminately over the combined systems, and for the provision of such additional rolling stock as is found to be necessary we would suggest—

- (A) That the Company should, to begin with, provide all additional rolling stock necessary for working the combined systems, until such stock bears the same proportion to the mileage of the new lines that the rolling stock of the Oudh and Rohilkhand bears to its own mileage, and that thereafter all rolling stock be paid for jointly in proportion to the mileage of the two systems.
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## 2.—Railway Traffic Rates.

No. 120 (Railway), dated 7th August 1885.

From—The Government of India,

To—The Secretary of State for India.

The considerable extension of the Indian Railway System in the last five years, within which the open mileage has grown from 8,492 miles at the end of 1879 to 12,001 miles on the 31st March 1885, and the increase in the number of separate lines from 26 in 1879 to 46 at the present date (not all under separate management, but still with varying interests), has brought into growing prominence the great difficulties that are involved in the settlement of the rates of different routes competing for the traffic of districts served by one or more lines, whether those routes may lead to the same or rival seaports.

2. At the same time, the fact of many of the newly-constructed lines, which are at present feeders to the main trunks, having by their extensions gradually come into close proximity with one another, has rendered careful adjustment of the freight rates of the main trunk lines a matter of great delicacy in order to prevent any undue preference being given to the traffic of one administration over that of another, and requires that any change of rate, however local in its significance it may at first sight appear, should receive the closest examination and scrutiny from the point of view of each of the lines concerned. To show that these difficulties are not purely imaginary, we may now briefly enumerate some of the more important questions of the class that have arisen within the last few years.

3. The first important competition arose in 1881, on the completion of the through route from Bombay to the North-Western Provinces and Punjab, *via* Ahmedabad to Agra and Delhi, and showed itself in the rivalry of the three routes for the piece-goods traffic of those provinces—

(i) From Calcutta, *via* East Indian Railway.

(ii) From Bombay, *via* East Indian Railway and Great Indian Peninsula Railway.

(iii) From Bombay, *via* Bombay, Baroda and Central India Railway and Rajputana-Malwa Railway.

This was followed in 1882 by the competition of the rival ports of Calcutta and Bombay for the grain export of the same districts, and the settlement of the rates on a fairly satisfactory basis had eventually to be undertaken by Government.

4. The difficulties as regards the claims of the rival seaports were, however, no sooner temporarily settled than others arose with the Oudh and Rohilkhand Railway. This line is peculiarly situated as regards the East Indian Railway, having three junctions—Aligarh, Cawnpore, and Benares\*—and found itself injured by the uniform freight charged by the East Indian Railway for export grain from all its northern stations, Cawnpore to Delhi; the result of which was to draw traffic on to the East Indian Railway from the Oudh and Rohilkhand Railway by the northern junctions, instead of allowing it to follow its legitimate course by the shortest route, thereby depriving the Oudh and Rohilkhand Railway of its proper mileage, while at the same time causing the East Indian Railway to carry the traffic for a longer lead of 192 miles for nothing. This question is still under discussion between the Administrations concerned.

\* A break, of course, exists in the railway communication here until the bridge is completed but traffic is through booked.



5. In 1884, the opening of the Bengal and North-Western Railway added another complication to the matter. The special reduced rates of the East Indian Railway for long distance traffic tend to draw the traffic from a portion of the districts served by the Bengal and North-Western Railway on to the East Indian Railway, *viâ* the Oudh and Rohilkhand Railway at Benares instead of *viâ* the junction of the former railway at Digha, again causing the East Indian Railway a longer lead for less charge. The completion of the Cawnpore-Achnera Railway has also introduced another element of competition with the East Indian and Oudh and Rohilkhand Railways, the rival routes for the important Sambhar salt traffic and other commerce between Oudh and Rajputana being the Cawnpore-Achnera metre-gauge route without the break of bulk *versus* the broad-gauge routes *viâ* the East Indian Railway and Oudh and Rohilkhand Railway with transshipment at Agra.

Under Conference Minute No. 89 of 1882, through booked goods have to be sent by the shortest route provided it is also the cheapest. Disputes have arisen about this which could be promptly settled by a Clearing House having power to distribute the receipts from such traffic.

6. The preceding paragraphs summarise, as briefly as possible, some of the chief difficulties that have arisen in the last four years in one portion of India, and may be taken as showing the nature of the questions that will probably arise in future in other districts. The powers which the Government of India, possess over the rates of the East Indian Railway, which on the one hand has formed the trunk line to one sea-board and the absolute control which it exercises over the Rajputana-Malwa Railway forming the greater portion of the mileage on the other, have enabled it, though not without difficulty, to settle most of the questions that have arisen; but its position with regard to the Guaranteed and Assisted Companies is not the same, and cases will no doubt arise in which the situation will become considerably altered and be one of great difficulty; hence the necessity for some Body independent of the Government to settle such disputes if possible, or refer them to the Government of India for arbitration under Chapter XIII of the new Railway Bill, when enacted, is being strongly enforced on our attention. As it is desirable for the Government to dissociate itself from questions of this nature, it appears to us that the time has come for considering the question of the formation in India of a Body analogous to the Clearing House Committee in England.

7. We would therefore request Your Lordship to enquire from the several Boards of the Guaranteed and Assisted Railway Companies whether the institution of a Clearing House for the above purposes would not largely facilitate the Railway business of this country.

8. The question of the establishment of a Clearing House was discussed at the Railway Conferences of 1880 and 1882, and again at the Traffic Conference of 1884. At the first two Conferences the proposal was negatived by a very large majority, but at last it was carried by one vote, the minority, however, including the traffic officers of the more important Indian Railways—East Indian, Great Indian Peninsula, Rajputana-Malwa, Sind, Punjab and Delhi, and South Indian. Such numerous and complicated questions are, however, now arising as to the interpretation of Conference rules—routes for traffic, charges by rival routes, simplification of classification and traffic, &c.—that the subject appears to require a further and more careful consideration than has yet been given to it, and the formation of a Clearing House Committee, empowered by its deed of incorporation to deal with such questions, appears to be a necessity of the immediate future.

No. 78 (Railway), dated 21st July 1887.

From—The Secretary of State for India,  
To—The Government of India.

The accompanying correspondence\* has passed between this Office and the Board of Directors of the East Indian Railway Company on the subject of the control exercised by Government over the Company's rates and fares.

\* Letter from Company, dated 6th May 1887, and enclosed note by the Secretary.

Letter to Company, dated 8th June 1887.

Ditto from ditto dated 1st July 1887.

Ditto to ditto dated 20th July 1887.

† Clause 26 of Indian Midland Railway contract—

"26. The Company shall be entitled to charge the public for services rendered by way of conveyance on the projected railway of passengers and goods of different classes and descriptions at such rates only as shall for the time being be approved by the Secretary of State. The Company may from time to time, and at the request of the Secretary of State, shall submit for the approval of the Secretary of State maximum and minimum rates within which the Company is to be at liberty to charge for such services, and the Secretary of State may approve such rates with such modifications as he shall think fit, and may also from time to time require the Company to make such modifications in the maximum and minimum rates for the time being in force as he shall think fit. Provided always that as often as the Secretary of State shall require the Company to make any such modification as last aforesaid, he shall give to the Company not less than six months' previous notice of his intention in that behalf in order to give the Company time to submit its views with reference to such modification. Provided also that when the Secretary of State shall declare that the case is one of public emergency, it shall be sufficient for him to give such shorter notice as under the circumstances he shall consider reasonable. The Company shall not in making charges to the public for services mentioned in this section exceed in any such charge at a rate which shall be either above the maximum or below the minimum rate for the time being applicable under this section to the particular service in respect of which the same charge is made, or make any reduction by way of rebate or otherwise which shall have the effect of bringing any rate actually paid below such minimum. The term 'goods' shall, as regards this section, include everything conveyed on the projected railway, passengers only excepted."

2. The Board complain of the inelastic nature of the present system of control, which necessitates frequent references to the Government officers, and places them at a disadvantage in the competition which has in recent years sprung up for the traffic of the North-Western Provinces.

3. On receiving the representations of the Directors, I recognised the force of their arguments, and offered to grant them the same conditions as were contained in the Midland Railway contract, which were settled after full consideration, and are embodied in the 26th clause of the contract, as recited in the margin.†

4. The Board have accepted these conditions, which will enable them to fix and vary their own rates within certain limits approved by Government, and I have to request that you will take steps, in communication with the Company's Agent, for carrying the new arrangement into practice.

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No. 54, dated 6th May 1887.

From—A. P. DUNSTAN, Esq., Secretary, East Indian Railway Company, London,  
To—The Under-Secretary of State for India.

The Board are under the necessity of addressing the Secretary of State in regard to Clause 16 of the contract between the Company and the Secretary of State, dated 22nd December 1879, for the working by the Company of the East Indian Railway undertaking.

The clause runs as follows, omitting its concluding proviso, which has no bearing on the question now raised :—

"The Company shall charge such rates and fares for the carriage of goods and passengers as may from time to time be fixed by the Company, with the approval of the Secretary of State."

At the date of the contract, the undertaking was practically free from the

competition of other Railways. That condition is changed, and the undertaking is now subjected, in the matter of its merchandise traffic, to a rivalry the keenness of which will be gathered from a perusal of the papers appended.

The Board are satisfied that, having regard to the easy gradients of the East Indian Railway, its solid construction, cheap fuel, and, consequently, low working expenses, they can meet all fair competition, if only allowed reasonable freedom in the matter of the settlement of its rates. The administrations of the Railways connected and competing with the undertaking have almost complete freedom and discretion in the matter of rates, while the administration of the East Indian undertaking, on the other hand, is allowed no discretion whatever, and is seriously hampered by the rigorous exercise of the power reserved by the Secretary of State under the above-quoted clause of the contract. Every proposed change has to be referred to the Government of India, and the delay consequent thereon prevents the administration of the East Indian Railway from acting promptly where prompt action is essential to the retention or development of traffic, even when its proposals for rates are eventually approved by the Government.

The Board submit that a limited discretion should again be allowed to them, and is, in fact essential to the efficient working of the undertaking. This is no new question, as will be seen by a perusal of the Secretary's appended note on the subject of the "Government control of rates" under the previous contract. An arrangement suitable to the then circumstances was conceded, based as was natural, in the face of the virtual monopoly possessed in those days by the undertaking, on the principle of providing against excessive charges to the public for the work done by the Railway Company. At that time it was thought to be necessary to protect the public as against the Railway Companies; the necessity has now arisen of preventing undue competition amongst the Railway Companies themselves.

In view of the present position of affairs, the solution which the Board advocate is the fixing of a minimum rate, down to which the administration of the undertaking shall have freedom to work, but below which the administration shall have no power to go without the previous approval of the Government, and all variations above which shall be recorded in the minutes of the official meetings for their informain.

The principle of allowing a working Company discretion within minimum rates has been recognised in the contract between the Bombay, Baroda and Central India Company and the Secretary of State for working the Rajputana-Malwa Railway, and the same condition applies to the Cawnpore-Achnera Railway, which is now worked by the same Company in connection with the Rajputana-Malwa Railway. A similar condition has also been embodied in the contracts between the Secretary of State and the Indian Midland and the Bengal-Nagpur Railway Companies respectively. It is not unreasonable, therefore, on the part of the Board to ask for this concession.

The average cost of carrying one ton of goods one mile for the half-year ended 30th June 1886 was, on the East Indian Railway, 2·15 pies, or ·079 of a pie per maund per mile, and the Board submit that an advance of, say, 20 per cent. on this average cost, or ·094 of a pie per maund per mile, would be a proper minimum for this Company; they also beg that, as formerly, they may be granted full power to vary the rates for their goods traffic down to such minimum without having first to obtain the sanction of the Government of India, a record of all such alterations being made in the official minutes for the information of the Government.

No. 820-87 P.W., dated 8th June 1887.

From—Sir JOHN E. GORST, Under-Secretary of State for India,  
To—The Secretary, East Indian Railway Company, London.

In reply to your letter, No. 54, dated 6th May 1887, in respect to the control by Government over the fares and rates charged by the East Indian Railway Company, I am directed to state, for information of the Board, that if the Company are prepared to accept the arrangement which is embraced in the clause of the contracts with the Indian Midland Railway Company given

in the margin, the Secretary of State for India is prepared to agree to the application of the same system to the East Indian Railway, and will inform the Government of India accordingly.

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No. 80, dated 1st July 1887.

From—A. P. DUNSTAN, Esq., Secretary, East Indian Railway Company,  
London,  
To—The Under-Secretary of State for India.

I am instructed by the Board of Directors to acknowledge receipt of Sir John E. Gorst's letter of the 8th ultimo, in reply to the Board's representations on the subject of the Government control of rates, dated 6th May last.

The Board are willing to accept the proposal of the Secretary of State by way of supplement to clause 16 of the contract, and, as regards the rates for goods, as defining the "approval" reserved to the Secretary of State in the first sentence of that clause.

The Agent of the Company will be instructed accordingly to lose no time in coming to an agreement with the authorities in India as to a maximum and minimum rate for all goods, it being understood that it will be within the discretion of the Agent to vary the rates from time to time within those limits.

The authority given to the Agent will be exercised, of course, with due respect to the Conference rules, and his proceedings will invariably be recorded in the minutes of the official meetings.

The Board will instruct their Agent to give a loyal support to the intentions of this arrangement, so as to afford the fullest opportunity of carrying out its objects, by enabling this Company to compete on equal terms with foreign lines for the traffic of the districts served by them, to the mutual advantage of the peoples affected, and of the Railway Companies.

The Board desire to add that, when writing their letter, No. 54, of the 6th May last to the Secretary of State, they were under the impression that the minimum granted to the Rajputana-Malwa Railway was, as stated, '12 pie per maund per mile. They have since learned that the minimum for distances over 400 miles is '10 pie per maund per mile.

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No. 1250-87 P.W., dated 20th July 1887.

From—Sir JOHN E. GORST, Under-Secretary of State for India,  
To—The Secretary, East Indian Railway Company, London.

I am directed by the Secretary of State for India to acknowledge the receipt of your letter of 1st July 1887, No. 80, stating that the Board of Directors of the East Indian Railway Company are willing to accept the proposal made in

Sir John Gorst's letter of 8th June last, with regard to the control exercised by Government over the Company's rates and fares.

The Government of India will be informed of the decision of the Secretary of State, and will be requested to carry the new arrangement into effect in conjunction with the Company's Agent in India.

No. 16 (Railway), dated 25th February 1886.

From—The Secretary of State for India,

To—The Government of India.

Upon receipt of Your Excellency's Railway letter No. 120, of the 7th August last, I caused a letter\* to be addressed to all the Indian Railway Companies, a copy of which is herewith forwarded, requesting that the several Boards of Directors would give the proposal to establish a Railway Clearing House in India their best attention, with a view, if possible, of establishing a system which, like the Railway Clearing House in this country, would both facilitate public convenience and promote the interests of the Railway administrations.

2. I now transmit, for the information of your Government, copies of

Letter from Great Indian Peninsula Railway Company, No. 151, of 14th November 1885.

Ditto from Bombay, Baroda and Central India Railway Company, No. 585, of 27th November 1885.

Ditto from Madras Railway Company, No. 7070, of 27th November 1885.

Ditto from Cudh and Rohilkhand Railway Company, No. G. 149, of 19th November 1885.

Ditto from Southern Mahratta Railway Company, No. 87, of 12th November 1885.

Ditto from Bengal Central Railway Company, No. 812 B., of 26th November 1885.

Ditto from Bengal and North-Western Railway Company, No. 407, of 13th November 1885.

Ditto from South Indian Railway Company, No. 1341, of 20th January 1886.

Ditto from East Indian Railway Company, No. 22, of 5th February 1886.

letters which have been received from the Railway Companies marginally noted, from which it will be seen that the general feeling is opposed to the scheme enclosed in your letter, which proposes to entrust to a Clearing House Committee functions going much beyond those of the body existing under that name in this country, and is inconsistent with the terms of the contracts with the various Companies.

3. Although some of the Boards would not object to the formation of a Clearing House of the English type,

many of them consider the proposal premature and unnecessary, and I am not prepared to press the measure upon them until I am in possession of more complete evidence that the traffic really requires it, and that the plan would not be a cause of needless expense, as is alleged by those who oppose its adoption. If, however, a modified plan on a more limited basis were prepared in communication with the representatives of the Companies, I anticipate that a disposition will be shown to co-operate with the view of carrying it out.

4. I observe that the chief point on which stress is laid in Your Excellency's letter on this subject is the importance of obtaining some means of settling the rates by different routes competing for the traffic which lead to the various seaports. It appears to me that it is beyond the proper scope of the duties of the Government of India to interfere in such matters otherwise than by exercising the influence it possesses, whether by reason of its powers under the contracts with the various Companies, or as the owner of the State lines of railway, or as the representative of the general interests of the country.

No. 4 (Railway), dated 10th January 1888.

From—The Government of India, Public Works Department,

To—The Secretary of State for India.

The question of competitive rates upon railways in India has for some years past formed the subject of correspondence between ourselves and Her Majesty's Government.

Commencing in 1881, when the through opening of the Rajputana Railway afforded direct access from North-Western India to Bombay, and enabled that seaport to compete with Calcutta in the export trade of grain produced in Upper India, the question has become more intricate as the railway system has developed, and as fresh interests have been involved.

2. Apart from the rivalry between the routes to Bombay and Calcutta for the export of grain from the Upper Provinces, the peculiar situation of the Oudh and Rohilkhand Railway with its three junctions at Aligarh, Cawnpore, and Benares has for some time past led to competition between that Company and the East Indian Railway, fresh elements having been introduced by the completion of the Saharanpur Extension in 1886, and of the Ganges Bridge at Benares in 1887.

The opening of the Bengal and North-Western Railway in 1884 brought that Company into competition with the East Indian Railway; and the transfer of the Cawnpore-Achnera Railway to the Bombay, Baroda and Central India Railway Company placed the direct metre-gauge route from the Sambhur Lake to Cawnpore in antagonism with the broad-gauge route *via* the East Indian and Oudh and Rohilkhand Railways, with transshipment at Agra, both systems struggling, by bidding against each other in low rates, to secure the important salt and sugar traffic between Oudh and Rajputana.

The construction of the Rewari-Ferozepore Railway and of the Ferozepore Bridge has initiated a rivalry between the North-Western and the Bombay, Baroda and Central India Railways for the possession of the export trade from Kurrachee and Bombay respectively.

3. In endeavouring to arrive at a solution which should comprehend all the complicated references that have arisen from the competition between these various Lines, we have been guided by the views enunciated by Her Majesty's Government to the effect that we should allow rates and fares on railways in India to be dealt with as nearly as possible as they would be by independent Companies, the intervention of the Government of India being for the most part confined to the prevention of undue preference, and to the establishment of maxima and minima rates and fares.

These principles we have embodied in a Resolution,\* a copy of which we beg to transmit. We have been much assisted in

\* No. 1446 R. T., dated 12th December 1887.

the consideration of the question by an exhaustive note which has been drawn up by our Director General of Railways, a copy of which is also transmitted, and extracts from which have been published as an appendix to our Resolution.

4. That Resolution speaks for itself. We trust that it will meet with Your Lordship's concurrence, and that Your Lordship will exercise your influence to ensure an acceptance of its leading principles by the Boards of Directors of the Guaranteed and Assisted Railway Companies, so far as those principles do not traverse any conditions of their existing contracts, if, indeed, they cannot be brought to accept them in their entirety, as being likely, if so accepted, to reduce future difficulties to a minimum. We also beg that in arranging terms

with any Railway Companies which may be formed in future, Your Lordship will provide in their contracts that the general conditions of our Resolution above referred to shall be applicable, and that in granting now concessions which may be applied for by existing Companies, advantage may be taken of the opportunity for obtaining their assents to these principles, by making their acceptance a preliminary condition to the grant of the proposed concessions.

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No. 1446 R. T., dated 12th December 1887.

Resolution by the Government of India, Public Works Department.

**READ again—**

Despatch from the Secretary of State, No. 132 Railway, dated 19th October 1882. Public Works Department No. 162 R.T., dated 2nd March 1883, to the Government of Bombay.

Public Works Department Resolution No. 200 R. T., dated 25th February 1886. Despatch from Secretary of State, No. 16 Railway, dated 25th February 1886.

**Read also—**

Letter from the Director General of Railways, No. 775 T., dated 20th August 1887, and extract from enclosure.

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**OBSERVATIONS.**—In his Despatches read again the Secretary of State expressed the opinion that the rates and fares on Indian Railways should be dealt with as nearly as possible as they would be by independent Companies, *i.e.* that the Managers of Railways should be left to fix their own rates and fares, that the interests of Railways and trade generally would be better served by accepting the legitimate consequences of competition, and that the interposition of Government would be justified only in cases where Companies under the security of a guarantee might fix rates below what would cover the cost of transport with a margin of profit. The Government of India unreservedly accepted these principles, *vide* Public Works Department No. 162 R. T., dated 2nd March 1883, to the Government of Bombay, and in paragraph 11 of this letter His Excellency the Governor General in Council promised to subsequently issue certain general rules, subject to which the Managers of Railways might be left free to fix such rates and fares as seemed most advantageous for their respective lines.

2. The time now appears opportune for promulgating these rules, which His Excellency the Governor General in Council conceives should take the form of formally accepting certain general principles based upon the best recognised practice of the English and American Railways. Some of the more important of these principles seem to His Excellency in Council to be as follows:—

I.—That to protect the public and to prevent unreasonable charges on the part of the Railway Administrations, it is necessary for Government to impose restrictions as regards the maxima fares to be levied for the carriage of all classes of passengers, and the maxima rates for all descriptions of goods.

This principle has been recognized in every English Railway Act and in all the continental ones, as well as in all the American Acts authorizing the construction of railways.

In India, however, circumstances exist, not to be found generally in the railways of other countries, which make it necessary to fix minima as well as maxima rates and fares. In consequence of the Government guarantee granted to certain railways, it is possible to work a railway in this country at a loss to Government without affecting the pecuniary interests of the shareholders in any way, and at the expense of the taxpayer, *viz.*, when a Guaranteed line is not paying the guaranteed interest, and has no near prospect of so doing. A Guaranteed Company under these circumstances might unduly lower the rates and fares in competition below a point which would allow of a margin of profit, unless prevented from following this course by a minimum rate being fixed by Government. These minima, however, will be enforced only when circumstances have shown them to be necessary in the financial interests of Government.

II.—That the charges made to the public are admissible of division into two heads—(a) mileage rates and fares, which necessarily vary to some extent with the distance the passengers and goods are carried; and (b) terminals, this latter being a fixed charge for services incidental to the business of a carrier.

The maxima rates and fares are most conveniently fixed at a certain sum as a maximum charge per mile for each class of passenger and per mile per ton (or maund) for each class of goods. As regards terminal charges, however, it may be said at once that it is impossible to prescribe any maximum and minimum to meet all cases. Government must be contented with reserving to itself the power, in the event of cause being shown by any person concerned, of taking evidence on the matter and of fixing what, under the circumstances of any particular case, appears to be a fair and reasonable charge for terminals at that particular station. As regards the classification of goods an attempt was made at the Traffic Conference of 1884 to introduce an uniform classification, but owing to the opposition of one important Railway it was devoid of results. A move in this direction has, however, been made by the adoption by the East Indian Railway, North-Western Railway, Bengal and North-Western Railway and Tirhoot State Railway of a classification common to all four Railways, and it appears to His Excellency in Council advisable to order the introduction of this classification on all State lines, and unless due cause can be shown, on all Railways to be opened in future.

III.—That when once maxima and minima rates and fares have been fixed, any further interference on the part of Government in the matter of rates and fares is only a restraint of trade. The Railway Administrations, who know their own interests best, should be allowed to alter their rates within the prescribed maxima and minima to suit the varying conditions under which commercial business is everywhere carried on.

In granting this freedom, however, it is assumed that the English Clearing House principle, that in the case of two competitive routes between two stations the Company owning the shortest route fixes the rate, is accepted.

IV.—That, although in the interests of the public, the Government should abstain from direct interference in the matter of rates and fares, yet there are certain ruling principles which Government, as the guardian of the public interests, must see are complied with by Railway Administrations. There should be no undue preference. In other words, Railway Administrations ought not to be permitted to make preferential bargains with particular persons or companies, such as granting them scales of charges more or less favourable than those



granted to the public generally. Again, in cases where the traffic offering is sufficient to justify this arrangement, Railway Administrations must give reasonable facilities for public traffic between any two Railway stations, each Railway Administration being contented to receive for its share of the through rate less than its ordinary local rate.

The justice of this is evident when it is considered that all goods traffic is carried for long distances at lower rates than for short distances, so that if each Railway Administration were to charge its full local rate over its own comparatively short length of line, the aggregate would be so great as to restrict the traffic. The principles enunciated by Sir B. Leslie in his letter No. 633 G., dated 25th August 1880, for working through traffic, are all that could be required :—

“The various railway systems should as far as possible serve the country as if they were under one management, and the dealer in country produce should not be hampered in his operations by the necessity to base his calculations on as many different scales of rates as there may be railways between the starting point and destination. This can only be attained by adopting an uniform scale of rates for special or lower class goods which form the bulk of the country produce, and where there are alternative routes, by sending goods according to sender's option. The adoption of an uniform scale of rates for special class goods for the whole of the districts served by the East Indian Railway and Oudh and Rohilkhand Railway will, in my opinion, contribute largely to develop traffic. It will be, in my opinion, to the material advantage of the railways and interests of the public to adopt an uniform gradation scale of rates for special class goods, both for through and local traffic, on both railways; the earnings from through traffic to be divided in the ratio of the mileage.”

These rights were secured to the public in England by the Railway and Canal Traffic Acts of 1854 and 1873. Care will be taken to secure the same rights to the public in India in the new Indian Railway Act now under consideration, but in the meantime His Excellency in Council relies on all Railway Administrations, in the interests of the public, giving effect to the above principle IV as if it already had the force of law.

The question whether the charging of lower or an equal rate for a longer than for a shorter distance does or does not constitute “undue preference” appears to be at present unsettled in England, although the weight of legal authority is much against the practice, and it seems to be at least settled that the charging by a Railway Company of a lower or even an equal rate for a longer than for a shorter distance *does* constitute *prima facie* evidence of undue preference. The Governor General in Council is disposed to instruct the Managers of State Railways to accept this view of the matter until the Courts of Law in India give a decision on the legality or otherwise of charging a lower or an equal rate for a longer than for a shorter distance, and the Consulting Engineers should use their influence, in the interests of the public, to prevent any undue preference being allowed to exist on guaranteed lines.

3. The Government of India, while enunciating the above principles, which it considers should be observed in the working of all railways, and which it has determined shall be observed on all State Railways and Railways about to be opened, entertains the hope that the Railway Companies open at present will see that it is to their own advantage to adopt principles which the experience of English Railways and of those of other countries has shown to be most to the interests of all concerned, and leaves it to the good sense and business instincts of the several Railway Boards and Agents to recognize the advantage of uniformity in the working of the Indian Railway system as a whole. A beginning has

already been made by the assembling of periodical 'Railway Conferences; and Government would now go a step further and propose the formation of a Standing Committee of Railway Managers, somewhat of the nature of the Committee of General Managers of English Railways parties to the Clearing House, with the Director General of Railways as *ex-officio* Chairman.

**RESOLUTION.**—His Excellency the Governor General in Council is accordingly pleased to order as follows:—

- (a) That the schedule of maxima and minima rates and fares forming Appendix A to this Resolution shall be adopted on all Railways worked directly by the State and by all other Railway Administrations, whether their lines be already opened or not, so far as this schedule is not inconsistent with any contracts or agreements previously entered into, and that it shall not be departed from without due cause being shown.
- (b) That in order that the public may have complete information as to the maxima rates and fares which every railway is authorized to charge, the maxima and minima rates and fares fixed for each railway shall be published in their goods and coaching tariffs, under the signature of a Consulting Engineer if a private Company, and of the Secretary to Government in the case of a State line.
- (c) That, unless sufficient reasons can be brought forward against the adoption of this course, the general goods classification now in force on the East Indian Railway shall be accepted for all Railways worked directly by the State, and by all other existing Railway Administrations, with the same proviso as to interference with existing contracts as under (a) above.
- (d) That there shall be no undue preference, either as between two Railway Companies or between a Railway Company and a particular person or class of individuals, by making preferential bargains or by granting to one particular Company or person more favourable conditions for the carriage of goods than to the rest of the public at large.
- (e) That the Director General of Railways be instructed to place himself in communication with the several Railway Companies with a view to establishing a Standing Committee of Railway Managers.

**ORDER.**—Ordered, that this Resolution be communicated to the Governments

The Governments of Madras, Bombay, Bengal, and North-Western Provinces and Oudh.

The Chief Commissioners of the Central Provinces, Burma, and Assam.

The Resident at Hyderabad.

The Director General of Railways.

The Consulting Engineers to the Government of India for Railways, Calcutta, Lucknow, and Central Division.

and Administrations and Officers noted in the margin for information and guidance; also to the Government of the Punjab, the Resident in Mysore, the Agents to the Governor General for Rajputana, Central India, and Biluchistan,

and the Accountant General, Public Works Department, for information.

Ordered also, that this Resolution and its enclosures be published in the Supplement to the *Gazette of India*.

#### APPENDIX A.

##### *Schedule of Maxima and Minima rates and fares.*

Passenger Fares—	Maximum.		Minimum.	
	Pies per mile.		Pies per mile.	
1st class . . . . .	18		12	
2nd „ . . . . .	9		6	
Intermediate class . . . . .	4½		3	
3rd class . . . . .	3		1	

APPENDIX A—*contd.*

	Maximum. Pies per maund per mile.	Minimum. Pies per maund per mile.
<i>Luggage</i> . . . . .	2	1
	Maximum. Pies per mile.	Minimum. Pies per mile.
* <i>Carriages—</i>		
Single carriages . . . . .	42	30
	Maximum. Pies per truck.	Minimum. Pies per truck.
Two or more carriages on one truck . .	54	42
	Maximum. Pies per mile.	Minimum. Pies per mile.
* <i>Horses—</i>		
Single horse . . . . .	24	18
	Maximum. Pies per fifty miles or portion thereof.	Minimum. Pies per fifty miles or portion thereof.
<i>Dogs—</i>		
Each . . . . .	96	48
<i>Parcels—</i>		

The rates passed at the Railway Traffic Conference of 1884, as under:—

	First 100 miles.	Every additional 100 miles.
	Annas.	Annas.
† Not exceeding 5 seers or 1 cubic foot	3	1
„ „ 10 „ 2 cubic feet	6	3
„ „ 20 „ 4 „	10	5
„ „ 30 „ 6 „	13	6½
„ „ 40 „ 8 „	16	8
For every additional 10 seers or 2 cubic feet, or portion of 10 seers or 2 cubic feet . . . . .	4	2

Parcels exceeding 40 seers in weight or 8 cubic feet in measurement may be booked if accommodation will allow.

	Maximum. Pies per maund per mile.	Minimum. Pies per maund per mile.
<i>Goods rates—</i>		
5th class . . . . .	1	1
4th „ . . . . .	$\frac{5}{8}$	$\frac{5}{8}$
3rd „ . . . . .	$\frac{3}{4}$	$\frac{3}{4}$
2nd „ . . . . .	$\frac{1}{2}$	$\frac{1}{2}$
1st „ . . . . .	$\frac{1}{3}$	$\frac{1}{3}$
Coal, edible grain, and other low- priced staples carried at special rates	$\frac{1}{3}$	$\frac{1}{10}$

\* Subject to a minimum charge of Rs5.

† Subject to a maximum charge of Rs1 for a parcel not exceeding 5 seers, irrespective of distance.

## APPENDIX B.

Extracts paras. 1 to 49 and 122 to 171 from Note by the Director General of Railways, dated 31st July 1887,—printed below.

*Note by Lieutenant-Colonel L. Conway-Gordon, Director General of Railways, dated 31st July 1887, on Railway Rates and Fares in India. (a)*

## LIST OF WORKS CONSULTED.

- A.—Bigg's General Railway Acts, with Supplement.  
 B.—Report of Messrs. Thurman, Washburne and Cooley, constituting an Advisory Commission on Differential Rates by Railroads between the West and the Seaboard, dated July 20th, 1882.  
 C.—Report from the Select Committee on Railways (Rates and Fares) with Minutes of Evidence, 1882.  
 D.—United States Act to regulate Commerce.—Approved, February 4th, 1887.  
 E.—First Annual Report of the Railway Commissioners.  
 F.—Second        "        "        "  
 G.—Third        "        "        "  
 H.—Fourth       "        "        "  
 I.—Fifth        "        "        "  
 J.—Sixth        "        "        "  
 K.—Seventh     "        "        "  
 L.—Report of Royal Commissioners on Railways, 1867.  
 M.—State purchase of Railways.—C. Waring, 1887.  
 N.—The Law of Railways.—Browne and Theobald, 1881.  
 O.—Report from the Select Committee on Railways (Rates and Fares), 1881.  
 P.—Les Chemins de fer français: Étude historique sur la constitution et le régime du réseau, 1884.  
 Q.—Dictionnaire législatif et réglementaire des chemins de fer, 1881.

I believe the time has now come when Government must intervene more actively than it has hitherto done in the matter of rates and fares in force on the Indian Railways. In the first stage of railway development, when railways are practically isolated and competition hardly exists, railway rates and fares are necessarily based solely on local requirements. At a later stage, when the railway system has extended, and the network of lines has become more complicated, the railways cease to be useful merely to the local public. (b) They pass from being what the French classify as "*Chemins d'intérêt local*," into being "*Chemins d'intérêt général*." They become intermediaries between distant points, and their tariffs have to be adjusted to meet the altered circumstances of the case. The numerous cases of disputes between the various competing Railway Companies in India, the many complaints put forward by Chambers of Commerce and traders on the subject of railway rates and fares, that are

(a) In this note, I have made use of all the works on the subject of rates and fares which the very limited resources of the Public Works Secretariat Library placed at my disposal; and I have, as far as I could, purposely adhered to the actual wording of the report, evidence, &c., to which I have referred. In most cases I have given my authority; but in many cases I have been unable to show the extract as a quotation owing to the necessity of slightly altering the wording in order the better to suit the context.

(b) "Nothing, however, in our investigation of the subject has struck us more forcibly than the fact that the growth of railroad business has been such as to take from the several trunk roads the purely local character they formerly possessed. [B; page 3.]

"Moreover, with the rapid extension of railways in India, the old conditions under which the traffic was worked must necessarily be modified." Extract from letter from the Government of India, Public Works Department, No. 923 R.T., dated 16th September 1886.

now referred so frequently to Government for settlement, prove conclusively that India is now passing beyond the first and simple stage of railway development into the later and more complex.

2. I shall, in this note, first indicate what appear to be the principles in regard to railway tariffs that are generally accepted by the best authorities in England, America and elsewhere; I will then shortly sketch the actual state of Railway tariffs in India; and finally put forward some recommendations as as to what is now, in my opinion, the best course for Government to pursue.

3. The leading principles which have been accepted in England and elsewhere in regard to railway rates and fares appear to be as follows:—

*I. That, in the interests of the public, in order to prevent unreasonable charges on the part of Railway Administrations who have by Government been given a practical monopoly of the land-carrying trade of the country, it is necessary to lay down some restriction on the maxima fares to be levied by Railway Administrations for the carriage of all classes of passengers and on the maxima rates for the conveyance of all descriptions of goods.*

4. It is perhaps hardly necessary to make any remarks on this principle, for it has been recognised in every English Railway Act, in the German and French Railway Legislature, and not only in the Railway Acts of the separate American States, but also in the general Act of the United States to regulate commerce passed in February 1887.

5. This restriction is imposed as a matter of public policy, it being impracticable for each one of the public to contract freely with a strong Railway Administration in a small matter of which the Railway Administration holds the monopoly. (a)

6. It may be observed, however, that legal maxima rates afford little real protection to the public, since they are usually fixed so high that it is, or becomes sooner or later, the interest of the Railway Administrations to carry at lower rates. (b)

7. After maxima rates are fixed Railway Administrations should have the power of applying to Government for permission to raise these maxima on due cause being shown that the prescribed rates or fares are insufficient; but they should not be allowed to take the matter in their own hands, and to charge rates and fares to the public in excess of the prescribed maxima. (c)

*8. II. That the tolls charged to the public, at all events so far as goods rates are concerned, must practically be divided into two heads:*

A. Mileage rates, *i.e.*—Tolls for the use of the railway, including the use of wagons and trucks, locomotive power, and every other expense incidental to the conveyance of the goods, inclusive of profit.

B. Terminals, *i.e.*—Charges for services incidental to the business or duty of a carrier; such as the working charges, repairs, renewals, and insurance of station buildings, sidings, sheds, platforms, warehouses, cranes, turntables, weighing machines, hydraulic power, fixed appliances, machinery, &c.; ground-rent; loading and unloading; clerkage; weighing and checking of goods; stores; covering; portorage, and labour of every description; shunting; gas and lighting; rates and taxes; risk of damage in loading and unloading; cartage; claims for compensation, &c. &c., inclusive of profit.

(a) C.—Mr. J. H. Balfour Browne; Question No. 1404.

(b) C.—Report of the Committee, page V.

(c) C.—Mr. J. H. Balfour Browne; Question No. 1170.

9. This division was recognised in the Report of the Select Committee on Railways (Rates and Fares) of 1882, *vide* page V.

"Your Committee, therefore, are of opinion that the right of Railway Companies to charge for station terminals should be recognised by Parliament."

10. It is also recognised in the United States Act to regulate commerce, and in the tariffs laid down by the continental Governments.

11. It is to be noticed that the Tolls or Mileage rates necessarily vary with the distance the goods are carried, while the Terminal are independent of that distance. The sum of the two, which is the charge made by the Railway to the public, forms what might be termed a natural differential rate.

12 *III. That the fixed maxima rates and fares under the head mileage rates are most conveniently given in a schedule, showing the maxima fares for each class of passenger per mile, and the rate per ton (or maund) per mile for each class of goods, all the different articles which have to be carried being entered into a prescribed classification showing the class under which each article is to be considered as belonging for the purpose of fixing the rate.*

13. In the English Railway Acts, for the most part, the classification of goods laid down is most imperfect. It seems to have been the intention of Parliament to give Railway Companies the power of charging a uniform rate per passenger per mile and per ton of goods per mile without distinction of class, with certain exceptions which are specified. The ruling rate is what is called the "Etcetera" rate, or the rate which appears in the "Etcetera" clause; but that seems to be the standard rate of charge which Parliament authorised the Railway Companies to make, and all the articles which are enumerated, and which are put at a lower figure, are exceptions to that rule. These are articles which either are carried in large quantities everywhere, or have some special reference to the district through which the line was about to be constructed. (a)

14. On the other hand, the classification attached to the American Railway Acts appears to be as complete as could be desired. (b)

15. A general goods classification should be drawn out by Railway experts and sanctioned by Government, or be issued by some Railway Conference, so as to command general acceptance. Even when drawn out, exceptions must be allowed to particular lines, as it may happen that in certain districts there is a large traffic in certain goods which can be carried at something less than the recognised general rates. (c)

16. Companies need not be bound to accept the same classification for local as for through traffic, but it is of course more convenient if they do. (d)

17. Such general goods classification must be elastic, that is, the Conference should have power to change articles from one class to the other.

18. Two points here particularly call for attention—

*1st.*—The very fact of having any goods classification at all— and no one would dispute the convenience of having a classification— is nothing but recognising preferential rates for certain articles. (e)

(a) C.—Mr. John Noble, General Manager, Midland Railway; Question 1908. Also L—Paragraph No. 62.

(b) C.—Appendix No. 6.

(c) C.—Mr. John Noble, General Manager, Midland Railway; Question No. 1911.

(d) C.—The same witness; Question No. 1909.

(e) C.—J. S. Forbes, Chairman, London, Chatham and Dover Railway Company; Question No. 2400.

2nd.—That if Government prescribe a maximum rate for each class of goods without at the same time prescribing classification, or if prescribing a classification, without placing any restriction on a Railway Administration altering goods from one class to another, it is obvious that the Railway Administration is practically unrestricted for any article whatever within the maximum rate allowed for the highest class of goods.

19. IV. *That under the second head, Terminals—i.e., the charges for services incidental to the business or duty of a carrier—the expense which a Railway Administration must incur in working different descriptions of traffic at different stations, varies so greatly that it is useless to attempt to prescribe any maximum to rule all cases. All that can be said is that the charges should be reasonable, and that Government should have the power, in the event of cause being shown by any person concerned, of taking evidence on the matter and of fixing what, under all the circumstances of the particular case, appears to be a fair and reasonable charge at that station for that particular description of traffic.*

20. The Select Committee of 1882, in their report, remarked—

“The same thing is true of terminal charges. The circumstances are so various and so constantly changing that any legal maxima which might now be fixed would probably be above the charges now actually made, certainly far above those which will hereafter be made. Indeed, attempts made in 1861 and 1866 to fix a maximum for terminals broke down, because the only maximum that could be agreed upon was so much beyond the charge then actually made to coal-owners that the coal-owners feared it would lead to a rise in that charge.

\* \* \* \* \*

“Your Committee, therefore, are of opinion that the right of Railway Companies to charge for ‘station terminals’ should be recognised by Parliament, so as to provide by a general Act that the sums which they claim a right to demand for terminals of any kind at each station shall be clearly entered in the rate book, or otherwise publicly notified at such station, so that it may be open to any body at any time to challenge before the Railway Commissioners, under the provisions of Section 15 of the Railways and Canals Traffic Act of 1873, the reasonableness of such sums; the Commissioners having power in giving their decision to take into account the maximum rates of the Company.” (a)

21. The following is the section of the American Railway Act dealing with terminals:—

“All charges made for any service rendered, or to be rendered, in the transportation of passengers or property as aforesaid, or in connection therewith, or for the receiving, delivering, storage, or handling of such property, shall be reasonable and just: and every unjust and unreasonable charge for such service is prohibited and declared to be unlawful.” (b).

22. Were Government to fix a maximum terminal, it would have to be a maximum sufficient to cover the heaviest expense the Railway Administration might incur in working the traffic at any one station, so that the Railway Administration everywhere else would be practically unrestrained. (c)

23. It is to be remembered that the terminal recognised in the division of a through rate between two or more Railway Administrations need not be, and practically is not, regulated by the same considerations that ought to regulate the terminal charge to the public. (d)

(a)—C. Report by Committee, page V.

(b)—D. Section 1.

(c)—C. Mr. J. H. Balfour Browne; Question No. 1332.

(d)—C. The same witness; Question No. 1484.

24. *V. That in fixing within the prescribed legal maxima the actual rates and fares to be charged to the public, Railway Administrations, must be regarded as other ordinary traders, and allowed to alter their charges to suit the varying conditions under which commercial business is everywhere carried on;—that all idea of fixing rates on the basis of their varying directly with the mileage, or with the cost of working, or with the cost of the line, or with the profits gained, or upon any other fixed and invariable principle must be definitely abandoned;—that although these are all necessarily factors in fixing rates, as well as the amount of traffic to be carried, the value of the articles, the bulk of the goods, the risk in, and expense of, handling,—the result after allowing for these factors has to be profoundly modified by the necessities of trade and by the competition on other routes by water or by other railways.*

*That, in fact, it has to be recognized that the only principle involved is that the rates should be, not the highest rates that Railway Administrations can obtain, but the highest rates they can obtain consistently with keeping up their traffic.*

25. This issue may be considered as definitely decided by the Select Committee on Railways (Rates and Fares) of 1882, and the whole argument, admirably stated, will be found in the Chapter on "*Fixing fares*" in their report.

26. See also the following:—

Report of Messrs. Thurman, Washburne and Cooley, constituting an Advisory Commission on Differential Rates by railroads between the West and the Seaboard.

Article by Sir Thomas Farrer on the Equalisation of Railway Rates in the *Fortnightly Review*.

Articles on Railway Rates and British Trade in the *Contemporary Review*—Vol. XLVI.

Letter from the Government of Bombay, No. 374, dated 24th February 1882.

27. In the case of *Baxendale versus the Great Western Railway Company* in 1858, the Lord Chief Justice, in his judgment, said—

"We must endeavour to prevent any injustice either in the rate of charge or the degree of accommodation afforded, at the same time that we carefully avoid interfering, except where absolutely necessary for the above purpose, with the ordinary rights which (subject to the before-named qualification) a Railway Company, in common with every other Company or individual, possesses of regulating and managing its own affairs, either with regard to charges or accommodation, or to the agreements and bargains it may make in its particular business."

28. The following are some of the principal considerations involved:—

*The question of direct control by Government.*—It is not sound policy to interfere too much in the details of Railway charges. The circumstances in which Railway Companies find themselves placed from time to time are so very various that the rates should be left, to a great extent, with the Companies themselves. The Companies know their own interests, and their interests are almost identical with those of the public.(a)

Government interference would be a restraint of trade which eventually would be a mischief to the public. (b)

(a)—C. Mr. Thomas Shaw, Manager of the Great Northern Railway of Ireland; Question No. 914.

(b)—C. Mr. B. D. M. Littler, Q. C.; Question No. 3657.



The fixing of all working rates is far too great a business for any Government Department to undertake; such a Department simply could not do it. (a)

Traders prefer to see the officers of the Railway Administration, and get a rate settled offhand than to make application to any Government authority; as such application would be sure to take time, and commercial business seldom admits of any delay. (b)

29. *The cost principle.*—The attempt to carry all traffic at the average cost of carriage would destroy all trade. The traffic in all materials carried in large quantities at very low rates, and all long-distance traffic, would disappear. (c)

If the Companies were to charge according to actual cost of conveyance, the rates would vary day by day according to the quantities carried and the seasons, and the trader could never depend upon having the same rate all the year round. (d)

"There is literally no end to the difficulties which beset the apparently simple question of determining the actual cost of carriage. It varies with different classes of goods. It varies according to the direction in which the same goods are carried. It varies from day to day and on different sections of the same Railway." (e)

The cost of the carriage of any ton or number of tons carried by rail can never be accurately apportioned. (f) It varies daily. With the odd general traffic, carried by Railways under constantly changing circumstances, it is impossible to assess the rate rateably. (g)

"We doubt the possibility, however, of ascertaining the cost of carrying particular commodities. To ascertain the *average* cost of carrying a unit of coaching or goods traffic during an entire half-year is in itself a complicated problem involving various assumptions which may not be absolutely correct and must in some cases be purely conjectural. But the *actual* cost of carrying goods varies for different lines, for different sections of the same line, for different seasons; almost it may be said from day to day. No practically useful results can, we believe, be derived from a minute investigation into actual carrying cost at any particular time. The *average* cost ascertained from the best data available may be taken as a general guide; but the rates must be fixed to suit the demands of the trade. They cannot be varied to correspond with the fluctuations in cost of carriage even if these could be accurately ascertained. Reductions, when their necessity is apparent, should be made without hesitation in view of the broad general results to be attained. Their effect can only be judged of by the general aspects of the receipts and working expenses of the Railway after they have been in operation for some time, which is the special province of very skilful Manager to study." (h)

The only case I am aware of in which working rates vary with the cost of working is on some of the English Railways where, by special agreement between the traders and the Railways concerned, the mineral traffic rates vary with the price paid for coal by the Railway Company. (i)

30. *The question of competition.*—Goods will find their way to market by the cheapest possible route, all things considered; and as this is so, the Rail-

(a) C. Mr. R. E. Webster, Q. C.; Question No. 1743.

(b)—C. Mr. John Walker, General Manager, North British Railway; Question No. 522.

(c)—C. Mr. William Birt, General Manager, Great Eastern Railway; Question No. 470.

(d)—C. Mr. John Noble, General Manager, Midland Railway; Question No. 1930.

(e)—Letter from the Government of Bombay, No. 374, dated February 24th, 1882.

(f)—C. Mr. William Birt, General Manager, Great Eastern Railway; Question No. 352.

(g)—C. The same witness; Question No. 357.

(h) Despatch from the Government of India, No. 186 B., dated October 30th, 1883.

(i)—C. Mr. J. Walker, General Manager, North British Railway; Question No. 536.

way Companies in respect to these particular things are just as much entitled to compete for them as any other carrying agency. (*a*)

Rates are in the first instance made upon a mileage scale as far as circumstances permit; but they have to be reduced directly a competition is set up; (*b*) every care and attention having to be shown to the wants of the public in adjusting rates which will bring traffic. (*c*)

To get the traffic, rates have to be materially altered from time to time (*d*) to such a paying price as the traffic can fairly afford. New rates have to be made and existing rates altered, to meet the daily varying circumstances of trade. (*e*)

If Railways did not give greater facilities for long-distance traffic and lower rates for shipment traffic, foreign trade would die away, and the consuming public would eventually suffer. (*f*)

While a Railway Administration is justified in taking, however small, a profit to get the traffic, it is not justified in carrying at a loss, as that would be carrying the traffic of one person at expense of another. (*g*)

31. The above considerations are, however, somewhat modified in the case of State Railways by the principle that the main object of State Railway is not to gain extravagant dividends for Government, but to develop and encourage the trade of the country. (*h*) Any net profits gained in excess of the interest payable by Government on the capital expended constitute a direct tax on the trade of the country.

32. VI. *That although, in the public interests, Government should carefully abstain from direct intervention in the matter of the working rates and fares, and "should take no step which would induce so much as a reasonable suspicion of its good faith with regard to the integrity of privileges already granted," there are certain ruling principles which Government, as the guardian of the public interests, must see are complied with by Railway Administrations in working:—*

(A) *That there must be no undue preference, i.e., that the Railway Administration is not to make preferential bargains with any particular person or Company, or with individuals of a particular class, and give them conditions of carriage or scales of charges either more or less favourable than those allowed to the public generally.*

(B) *That as far as the public are concerned, the Railway between any two given points no matter to how many different Railway Administrations this length may belong, must be worked as if it belonged to a single Administration. In other words, that Railway Administrations must give reasonable facilities for public traffic between any two connected Railway stations, in cases where the amount of public traffic between these two places is sufficient to justify such facilities being given.*

*That this intervention on the part of Government pre-supposes that each Railway Administration concerned must be content to receive for its*

(a)—C. Mr. J. S. Forbes, Chairman, London, Chatham and Dover Railway; Question No. 2387.

(b)—C. Mr. T. Shaw, Manager, Great Northern Railway of Ireland; Question No. 835.

(c)—C. Mr. J. Walker, General Manager, North British Railway; Question No. 884.

(d)—C. Mr. W. Birt, General Manager, Great Eastern Railway; Question No. 851.

(e)—C. The same witness; Question No. 463.

(f)—C. Mr. J. Walker, General Manager, North British Railway; Question No. 853.

(g)—C. Mr. J. H. Balfour Browne, Barrister-at-Law; Questions Nos. 1308—1316.

(h)—Letter from Bombay Chamber of Commerce, dated 1st July 1882.

*share of the through rate a lower rate than its ordinary local rate over the same distance. All goods traffic, it may be said, is carried for long distances at rates lower than for short; so that if each Railway Administration were to charge its full local rate over its own comparatively short length of line, the aggregate rate would be so great as to restrict the traffic. In other words, reasonable facilities would not be given to the public.*

33. This limited interference on the part of Government was first authorised by the English Railway and Canal Act of 1854, clause 2, which runs as follows :—

2. "Every Railway Company, Canal Company,, and Railway and Canal Company shall, according to their respective powers, afford all reasonable facilities for the receiving and forwarding and delivering of traffic upon and from the several railways and canals belonging to, or worked by such Companies respectively, and for the return of carriages, trucks, boats, and other vehicles; and no such Company shall make or give any undue or unreasonable preference or advantage to, or in favour of any particular person or company, or any particular description of traffic, in any respect whatsoever: nor shall any such company subject any particular person or Company, or any particular description of traffic, to any undue or unreasonable prejudice or disadvantage in any respect whatsoever; and every Railway Company and Canal Company and Railway and Canal Company having or working railways and canals which form part of a continuous line of railway or canal, or railway and canal communication, or which have the terminus, station, or wharf of the one near the terminus, station, or wharf of the other, shall afford all due and reasonable facilities for receiving and forwarding all the traffic arriving by one of such railways or canals by the other, without any unreasonable delay and without any such preference or advantage as aforesaid; and so that no obstruction may be offered to the public desirous of using such railways or canals, or railways and canals as a continuous line of communication; and so that all reasonable accommodation may, by means of the railways and canals of the several Companies, be at all times, afforded to the public in that behalf."

34. The Railway and Canal Traffic Act, 1873, went somewhat further, to the extent of saying that the facilities required to be given by Railway Companies for through traffic shall include the granting of through rates, *vide* section 11 as follows :—

11. "Whereas by section of the Railway and Canal Traffic Act, 1854, it is enacted that every Railway Company and Canal Company and Railway and Canal Company shall, according to their respective powers, afford all reasonable facilities for the receiving and forwarding and delivering of traffic upon and from the several railways and canals belonging to and worked by such Companies respectively, and for the return of carriages, trucks, boats, and other vehicles; and that no such Company shall make or give any undue or unreasonable preference or advantage to or in favour of any particular description of traffic, in any respect whatsoever, or shall subject any particular person or Company, or any particular description of traffic to any undue or unreasonable prejudice or disadvantage in any respect whatsoever; and that every Railway Company and Canal Company, and Railway or Canal Company having or working railways or canals which form part of a continuous line of railway, or canal, or railway and canal communication, or which have the terminus station or wharf of the one near the terminus, station or wharf of the other, shall afford all due and reasonable facilities for receiving and forwarding by one of such railways or canals all the traffic arriving by the other, without any unreasonable delay, and without any such preference or advantage or prejudice and disadvantage as aforesaid, and so that no obstruction may be offered to the public desirous of using such railways or canals or railways and canals as a continuous line of communication, and so that all reasonable accommodation may by means of the railways and canals of the several Companies be at all times afforded to the public in that behalf:

"And whereas it is expedient to explain and amend the said enactment: Be it therefore enacted, that—

"Subject as hereinafter mentioned, the said facilities to be so afforded are hereby declared to and shall include the due and reasonable receiving, forwarding, and delivering by every Railway Company and Canal Company, and Railway or Canal Company, at the request of any other such Company, of through traffic to and from the railway or canal of any other such Company at through rates, tolls, or fares (in this Act, referred to as through rates)."

Provided as follows :—

(1) "The company requiring the traffic to be forwarded shall give written notice of the proposed through rate to each forwarding Company, stating both its amount and its apportionment, and the route by which the traffic is proposed to be forwarded:

(2) "Each forwarding Company shall, within the prescribed period after the receipt of such notice, by written notice inform the Company requiring the traffic to be forwarded whether they agree to the rate and route; and if they object to either, the grounds of the objection:

(3) "If at the expiration of the prescribed period no such objection has been sent by any forwarding Company, the rate shall come into operation at such expiration:

(4) "If an objection to the rate or route has been sent within the prescribed period, the matter shall be referred to the Commissioners for their decision:

(5) "If an objection be made to the granting of the rate or to the route, the Commissioners shall consider whether the granting of the rate is a due and reasonable facility in the interest of the public, and whether, having regard to the circumstances, the route proposed is a reasonable route, and shall allow or refuse the rate accordingly:

(6) "If the objection be only to the apportionment of the rate, the rate shall come into operation at the expiration of the prescribed period, but the decision of the Commissioners as to its apportionment shall be retrospective; in any other case, the operation of the rate shall be suspended until the decision is given:

(7) "The Commissioners in apportioning the through rate shall take into consideration all the circumstances of the case, including any special expense incurred in respect of the construction, maintenance, or working of the route, or any part of the route, as well as any special charges which any company may have been entitled to make in respect thereof:

(8) "It shall not be lawful for the Commissioners in any case to compel any company to accept lower mileage rates than the mileage rates which such Company may for the time being legally be charging for like traffic carried by a like mode of transit on any other line of communication between the same points, being the points of departure and arrival of the through route:

(9) "The prescribed period mentioned in this section shall be ten days, or such longer period as the Commissioners may from time to time by general order prescribe:

"Where a Railway Company or Canal Company use, maintain or work, or are party to an arrangement for using, maintaining, or working steam vessels for the purpose of carrying on a communication between any towns or ports, the provisions of this section shall extend to such steam vessels and to the traffic carried thereby."

35. The American Law on the subject is substantially the same, as may be seen from the following extracts from the United States Act to regulate commerce :—

Clause 3. "That it shall be unlawful for any common carrier, subject to the provisions of this Act, to make or give any undue or unreasonable preference or advantage to any particular person, Company, firm, corporation, or locality; or any particular description of traffic in any respect whatsoever; or to subject any particular person, Company, firm, corporation or locality, or any particular description of traffic, to any undue or unreasonable prejudice or disadvantage in any respect whatsoever.

"Every common carrier, subject to the provisions of this Act, shall, according to their respective powers, afford all reasonable, proper, and equal facilities for the interchange of traffic between their respective lines, and for the receiving, forwarding, and delivering of passengers and property to and from their several lines and those connecting therewith, and shall not discriminate in their rates and charges between such connecting lines; but this shall not be construed as requiring any such common carrier, to give the use of its trucks or terminal facilities to another carrier engaged in like business."

36. It should be distinctly understood that there may be preference without undue preference. There may be circumstances that justify the preference. The fact of there being preference at all is *prima facie* evidence of its being undue preference; but this *prima facie* evidence may be rebutted by showing that the rate has been *bonâ fide* reduced to meet competition, or that the arrangement is otherwise so much in favour of the public generally as to make it advisable for the arrangement to continue :—(a)

37. The following extracts from the Reports of the Railway Commissioners show the meaning they attach to the English Acts as regards compulsory through traffic :—

"To prevent undue preference and to ensure the proper transmission and interchange of traffic were the two objects in view in passing the Railway and Canal Traffic Act of 1854; and it is a principal part of our duty to carry out upon demand the provisions of that Act. (b)

"The Act of 1854 requires the interests of traffic coming to a line from other lines to be as much cared for as those of local traffic. It requires that it should be made as easy to go from any place on the Railway of one Company to any place on the Railway, forming a through route, of another Company, as if both Railways belong to the same Company. Where, however, Companies are competing, arrangements for working their lines in harmony are not unfrequently overlooked; and the provisions of the Act, and ready means of enforcing them, are very necessary to prevent through traffic being impeded. (b)

"The Act of 1854 was passed, as we have said, in order, first, that all persons might be able to use the Railways upon equal terms as to charge and accommodation; and, secondly, that Railway Companies might be compellable to interchange through traffic without delay, and to convey it, as also local traffic, with reasonable facilities, such facilities including, as declared by the Act of 1873, the carrying at through rates at the request of any Railway Company. (b)

"The second section of the Traffic Act, 1854, is in three parts; and the third part is a provision regarding through traffic or traffic going over more than one Railway. It enjoins the two or more Railway Companies engaged in forwarding such traffic to afford all reasonable facilities for its transit; but it leaves the rates and charges to be levied and taken in return to be settled or agreed to by the Companies. These rates, however, are now, to some extent, regulated by Section 11 of the Act of 1873, which enacts that the facilities enjoined by the Act of 1854 shall include conveyance at through rates and gives to us, as Railway Commissioners, the power of imposing such rates on the proposal of any of the Companies interested." (c)

38. Mr. R. E. Webster, Q.C., in his evidence, in reply to Question No. 1669, puts the issue very clearly—

"Where it was shown to the Commissioners that there was a considerable traffic, or, I will put it, a considerable public demand, and where it was shown to the Commissioners that either the rates being charged by the route were higher than neces-

(a)—C. Questions Nos. 1266—1270.

(b)—H. Extracts from the 4th Report of the Railway Commissioners.

(c)—K. Extract from 7th Report of the Railway Commissioners.

sary, having regard to all the interests, or that the traffic was prevented from having as convenient a route in the interests of the public and then a rate was proposed, I think the Commissioners should have jurisdiction to entertain that application. I know it may be said, and truly said, that I have, to a certain extent, only put in other language some part of the clauses of section 11; but that is a kind of case which, I think, may be fairly left to the Railway Commissioners, and I do not think Railway Companies are right in saying that there is any injustice in that kind of jurisdiction being exercised. On the other hand (I can only define it this way), I do not think it would be a right thing that they should have power to impose a through rate simply because another Company wanted to get the traffic their way, if the public were thoroughly well served and the rates were proper and fair, there not being shown to be any public necessity for the change. (a)

39. VI. Mr. J. H. Balfour Browne, at one time Secretary to the Railway Commissioners, says, in reply to Question 1262 :—

“ In the interests of the public it is peculiarly expedient that the traffic should be carried without hindrance or obstructions, one of the obstructions being local rates, or re-booking, or matters of that sort.”

40. Through rates should not be allowed in the case of a Steamer Company unless there was complete evidence of the Steamer Company being able to maintain an efficient service.

41. That Companies in England always receive for through traffic less than their local rates seems to be generally admitted. Mr. John Walker, General Manager of the North British Railway, in his evidence before the Select Committee on Railways (Rates and Fares) in the year 1882, says, in reply to Question No. 643 :—

“ The proportion of the through rate is always smaller practically than the ordinary rate; we get practically in the division a smaller sum.”

Again, Mr. Thomas Shaw, the Manager of the Great Northern Railway of Ireland, says, in reply to Question 742 :—

“ In the fixing of (through) rates, the rule almost invariably followed is to take the shortest and cheapest route between the given points; ascertain what the local charges are upon that route, add them together, and then form a through rate something lower than the sum of the local charges. The through rate thus formed is common to every route, both long and short. Some routes are more circuitous than others; and the result is that the public have the advantage of all the routes at their own option, at the charge of the shortest or cheapest route.”

And in reply to Question 895, the same gentleman says :—

“ When we come to divide the receipts more or less between the Companies, we do not have a different mode of division between each station (junction?), but we have a uniform allowance for terminals, and the rest is divided according to mileage.”

42. The question regarding the subsequent division of the through rates between the different Railway Administrations has to be dealt with on a reasonable consideration of the facts involved; it is probable, however, that no better solution of the question will be found than the ordinary Railway practice in this respect in England, where the receiving and delivering Railways receive terminals, and the remainder of the through rate is divided between all the Railways concerned, according to mileage.

43. VII. *That the question whether the charging of a lower rate, or even an equal rate, for a longer than for a shorter distance does or does not con-*

*stitute undue preference, may be considered at present unsettled, but that the weight of legal authority is very much against the legality of the practice. It is at least settled even in England, where Railway Administrations probably enjoy more liberty of action than anywhere else, that the charging by a Railway Company of a lower or even an equal rate for a longer than for a shorter distance does constitute prima facie evidence of undue preference. And the American law goes even further.*

44. The decision of the Railway Commissioners in the case of the Denaby Main Colliery Company *versus* the Manchester, Sheffield and Lincolnshire Railway Company, decided in the year 1880, was actually to the effect that to charge the same rate for different distances *did* constitute *undue* preference. This decision was, however, much commented upon by the legal witnesses who appeared before the Select Committee on Railways (Rates and Fares) in 1882. The decisions in the cases of Budd *versus* London and North-Western Railway Company, and of Evershed *versus* the London and North-Western Railway Company, are also against the legality of the practice, and show that competition alone will not justify preferential rates.

45. The American Law in some of the States somewhat supports the same view by refusing to admit the plea of competition. This may be seen from Section 3 of the Act to prevent extortion and unjust discrimination by Railroad Companies passed by the State of Illinois in May 1873:—

"Section 3. *Prima facie* evidence of unjust discrimination.—If any such Railroad Corporation shall charge, collect, or receive, for the transportation of any passenger, or freight of any description, upon its railroad, for any distance within this State, the same or a greater amount of toll or compensation than is at the same time charged, collected, or received for the transportation, in the same direction, of any passenger, or like quantity of freight of the same class over a greater distance of the same railroad ;

"Or if it shall charge, collect, or receive, at any point upon its railroad a higher rate of toll or compensation for receiving, handling, or delivering freight of the same class and quantity than it shall at the same time charge, collect, or receive, at any other point upon the same railroad ;

"Or if it shall charge, collect, or receive, for the transportation of any passenger or freight of any description, over its railroad, a greater amount as toll or compensation than shall at the same time be charged, collected, or received by it for the transportation of any passenger, or like quantity of freight of the same class, being transported in the same direction, over any portion of the same railroad, of equal distance ;

"Or if it shall charge, collect, or receive from any person or persons a higher or greater amount of toll or compensation than it shall at the same time charge, collect, or receive from any other person or persons, for receiving, handling, or delivering freight of the same class and like quality at the same point upon its railroad ;

"Or if it shall charge, collect, or receive from any person or persons, for the transportation of any freight upon its railroad, a higher or greater rate of toll or compensation than it shall at the same time charge, collect, or receive from any other person or persons, for the transportation of the like quantity of freight of the same class being transported from the same point, in the same direction, over equal distances of the same railroad ;

"Or if it shall charge, collect, or receive from any person or persons, for the use and transportation of any railroad car or cars upon its railroad, for any distance, the same or a greater amount of toll or compensation than is at the same time charged, collected, or received from any other person or persons, for the use and transportation of any railroad car of the same class or number, for a like purpose, being transported in the same direction, over a greater distance of the same railroad ;

or if it shall charge, collect, or receive from any person or persons, for the use and transportation of any railroad car or cars upon its railroad, a higher or greater rate of toll or compensation than it shall at the same time charge, collect, or receive from any other person or persons, for the use and transportation of any railroad car or cars of the same class or number, for a like purpose, being transported from the same point, in the same direction, over an equal distance of the same railroad ;

"All such discriminating rates, charges, collections, or receipts, whether made directly or by means of any rebate, drawback, or other shift or evasion, shall be deemed and taken against such Railroad Corporation as *prima facie* evidence of the unjust discriminations prohibited by the provisions of this Act ; and it shall not be deemed a sufficient excuse or justification of such discriminations on the part of such Railroad Corporation, that the Railway Station or point at which it shall charge, collect, or receive the same or less rates of toll or compensation for the transportation of such passenger or freight or for the use and transportation of such railroad car the greater distance than for the shorter distance is a Railway Station or point at which there exists competition with any other railroad or means of transportation. This section shall not be construed so as to exclude other evidence tending to show any unjust discrimination in freight and passenger rates. The provisions of this section shall extend and apply to any railroad, the branches thereof, and any road or roads which any Railroad Corporation has the right, license, or permission to use, operate, or control, wholly or in part, within this State : Provided, however, that nothing herein contained shall be so construed as to prevent Railroad Corporations from issuing commutation, excursion, or thousand-mile tickets as the same are now issued by such Corporations."

46. It seems undoubted that to charge a higher or an equal rate for a shorter than for a longer distance is *prima facie* evidence of undue preference.

47. The following extract from the judgment delivered by Mr. Justice Manisty in the Queen's Bench Division, in the appeal of the Denaby Main Colliery Company *versus* the Manchester, Sheffield, and Lincolnshire Railway Company, bears upon this point :—

"The first point being whether there was any evidence to go to the Commissioners as to whether or not the Railway Company were giving an undue preference, say, among others to the Grange Colliery, I should have thought really it was not arguable, because the moment it is admitted to be the fact that the Grange Colliery is 17 miles further distant from the shipping port than the Denaby Main, in my judgment there is *prima facie* evidence,—not only *prima facie* evidence but a *prima facie* case. It may be, then, there are many circumstances which would explain that and rebut that inference ; but that is a question for the Commissioners, and they have come to the conclusion that there are no circumstances here to rebut that which is a *prima facie* case. Therefore, I cannot doubt but that there was evidence before them." (a)

48. Section 4 of the United States Act to regulate Commerce, seems to me to be perhaps as equitable a provision as the circumstances of the case admit of :—

Section 4.—"That it shall be unlawful for any common carrier, subject to the provisions of this Act, to charge or receive any greater compensation in the aggregate for the transportation of passengers or of like kind of property, under substantially similar circumstances and conditions, for a shorter than for a longer distance over the same line in the same direction, the shorter being included within the longer distance, but this shall not be construed as authorizing any common carrier within the terms of this Act to charge and receive as great compensation for a shorter as for a longer distance : Provided, however, that upon application to the Commission appointed under the provisions of this Act, such common carrier may, in special cases, after investigation by the Commission, be authorized to charge less for longer than for shorter distances for the transportation of passengers or property, and the Commis-



sion may from time to time prescribe the extent to which such designated common arraira may be relieved from the operation of this section of this Act."

This would appear to be the opinion of Sir Thomas Farrer, as may be seen from the following extract from his article on the Equalisation of Railway Rates :—

"Under these circumstances, if there is to be legislation on this subject at all, the justice and expediency of the case would probably be met by a provision requiring the Companies, wherever a case of differential charge was proved, to give their reasons for it. If the Companies could show that in the particular case the lower rate complained of was founded either on difference of cost or convenience to the Companies, or on competition, actual or probable, or on reasonable prospect of profit to the Companies, these circumstances should be held to justify the lower rate. If they could not show any of these justifications, the Railway Commissioners should have power to put an end to the differential rate."

49. It seems clear that Railway Administrations should be obliged to show cause before such an arrangement is permitted. On the other hand, the system of grouping stations is very convenient, as it involves the fixing and the putting in force of only one rate. This system is largely in force in England, as many as 115 stations *close together* being sometimes grouped together.

50. I will now briefly sketch the present position of each Railway in respect o its maxima rates and fares.

#### *Great Indian Peninsula Railway.*

51. Paragraph 8 of the contract between Government and the Company, dated 17th August 1849, deals with the question of maxima rates and fares in the following terms :—

"And the said Railway Company shall be authorized and empowered to charge such fares for the carriage of passengers and goods, and such rates for telegrams and such tolls for the use of the said Railway as shall have been approved by the East Indian Company, and shall not in any case charge any higher or different fares or tolls whatsoever, without such approval being first obtained ; but such fares and tolls shall when such net receipts as are hereinafter mentioned shall in any year have exceeded ten per cent. upon the outlay, be reduced in accordance with any requisition of the East India Company in that behalf, but only with a view of limiting the said fares and tolls so far that the net receipts shall not exceed ten per cent. as aforesaid."

52. The powers of Government under these contracts have been held to be as follows :—Government possesses no power to reduce fares and rates already established until the line earns a dividend of over ten per cent. ;—Government can therefore deal only with proposals to raise fares and rates, or with cases in which fresh fares and rates have to be fixed for an extension of the line about to open. (a)

53. The maxima rates and fares for this Railway were fixed in 1868 as under :—(b)

<i>Passengers.</i>										Per mile.
										Pies.
1st class	.	.	.	.	.	.	.	.	.	24
2nd "	.	.	.	.	.	.	.	.	.	12
3rd "	.	.	.	.	.	.	.	.	.	8
4th "	.	.	.	.	.	.	.	.	.	3

(a)—Paragraph 8 of Circular No 10R., dated 16th October 1867.

Office-note by General Dickens, dated 17th September 1867.

Letter from the Government of India, to the Government of Bengal, No. 818R., dated 12th May 1867.

(b)—*Bombay Gazette*, dated 30th April 1868.

Resolution of the Government of India in the Public Works Department, No .1174-80R., dated 6th October 1868.

*Luggage.*

"Maximum rate, 4 pies per maund per mile.

"The following scale of free luggage to be allowed:—

	Seers.	fb.
1st class . . . . .	60 =	120
2nd „ . . . . .	30 =	60
3rd „ . . . . .	10 =	20
4th „ . . . . .	10 =	20

*Carriages.*

"Maximum rate, 48 pies per mile. Minimum charge, R4.

*Horses.*

"Maximum rate, 24 pies per mile. Minimum charge, R2-8.

"The Railway Company will not be responsible for more than R400 as the value of any horse, unless insured at special rates.

*Dogs.*

"Maximum rate, 8 annas per 50 miles.

*Parcels.*

"Maximum charge for parcels under 7 seers for the first 50 miles not to exceed 6 annas. Maximum rate for every 50 miles beyond the first 50, to be 3 pies per seer.

*Maximum Goods Rates.*

	Pies per ton per mile.	Pies per maund per mile.
5th . . . . .	54 =	1-98
4th . . . . .	36 =	1-32
3rd . . . . .	24 =	0-88
2nd . . . . .	18 =	0-66
1st class goods . . . . .	12 =	0-44
Food grains . . . . .	12 =	0-44
Coal . . . . .	10 =	0-37

*Terminal Charges.*

"R5 per ton (= 2-94 annas per maund) at Bombay, and R2-8 (= 1-47 pies per maund) at up-country stations.

*Insurance Rates.*

"The maximum rate for the most precious articles to be 3 per cent."

54. Nothing was said in this Gazette notification as to any prescribed classification showing what articles were included under each class, nor was there, as far as I can see, any restriction placed on the powers of the Company to alter articles from one class to another. The only articles specifically mentioned, are food grains and coal. There is, therefore, so far as the public are concerned, no restraint whatever over the Company's goods rates within a limit of 54 pies per ton per mile (or 1-98 pies per maund per mile) on all articles other than food grains and coal. [ *Vide* paragraph 18 *ante*.]

55. The limiting rate of 54 pies per ton (1·98 pies per maund) per mile for every article other than food grains and coal, as well as the maximum rate of 12 pies per ton (0·44 pies per maund) per mile for food grains, and 10 pies per ton (0·37 pies per maund) per mile for coal, were one and all so high that the Company is practically unrestrained as regards all goods rates. [*Vide* paragraph 6 *ante*.]

56. Much the same may be said with regard to the passenger fares.

57. There is no clause in the Contract reserving to Government the general right which is expressed in the English model clause to the effect that nothing contained in the contract should exempt the Company from the provisions of any subsequent legislative Act generally applicable to railways. I notice this, as I observe that the Contract was signed in August 1849, whereas the Select Committee of 1844 had advised, some five years before, that such rights should always be reserved.

58. The Contract does not contain any 'Through traffic facilities' clause or any 'Undue preference' clause.

### *Bombay, Baroda and Central India Railway.*

59. The clause in the Contract between Government and the Company, dated 21st November 1855, which regulates the maxima rates and fares to be charged on the Bombay, Baroda and Central India Railway, is identical with that of the Great Indian Peninsula Railway. [*Vide* paragraphs 51 and 52 *ante*.]

60. The maxima rates and fares to be charged were fixed at the same time as those of the Great Indian Peninsula Railway, and were identically the same, except that no maximum fare was laid down for the 4th class. The 4th class at a maximum fare of 3 pies per mile was, however, made compulsory when the 3rd class fare exceeded 4 pies per mile. (*a*)

61. The statements contained in paragraphs 54 to 58 apply equally to this Contract and to the restrictions placed by Government in the interests of the public on the maxima rates and fares on this Railway.

62. On the 24th September 1884, Government concluded a contract with this Company for the lease of the Rajputana-Malwa State Railway. The following were the terms agreed upon as regards maxima rates and fares:—

16. "The Secretary of State shall have power from time to time to fix and vary both the maximum and minimum rates with a reasonable difference between them for the carriage of passengers and goods over the railways comprised in the Undertaking,\* and the rates and fares to be charged by the Company for the carriage of such passengers and goods shall not exceed the maximum and shall not be less than the minimum rates so fixed.

\* *i.e.*, the Railways comprising the Rajputana-Malwa system.

"And the Company, in respect of all passengers and goods derived from or delivered to any Railway comprised in the Undertaking and which may be carried over the Bombay and Baroda Railway or any part thereof, shall book through between all stations comprised in the Undertaking and all stations on the Bombay and Baroda Railway, and shall charge not more than same mileage rates for the distance, which such passengers and goods shall be carried over the Bombay and Baroda Railway or any part thereof as shall be charged on the railways comprised in the Undertaking, and all stores required for use on the Bombay and Baroda Railway or any part thereof and on the railways comprised in the Undertaking or any part thereof shall be carried at the same mileage rates over the Bombay and

Baroda Railway and over the Railways comprised in the Undertaking, such rates not being less than the actual cost of conveyance."

63. The following extract shows the maxima fares and rates laid down by Government for the Rajputana system in December 1884:—(a)

"In accordance with paragraph 16 of the contract, the following maximum and minimum rates for the carriage of passengers and goods over the Rajputana-Malwa Railway will have effect from the 1st January 1885, and are to continue in force until further orders. His Excellency the Governor General in Council reserves to himself the right to vary these maxima and minima:—

*Passenger Fares.*

	Maximum Pies per mile.	Minimum Pies per mile.
1st class . . . . .	18	12
2nd „ . . . . .	9	6
Intermediate . . . . .	4	3
3rd class, mail . . . . .	3	2
„ under graduated scale . . . . .	2½	1½

*Goods Rates.*

	Maximum Pies per maund per mile.	Minimum Pies per maund per mile.
1st class and special goods . . . . .	0·35	0·14*
2nd „ . . . . .	0·55	0·50
3rd „ . . . . .	0·70	0·60
4th „ . . . . .	0·85	0·75
5th „ . . . . .	1·00	0·90

\* "Exception.—The minimum rate for 1st class and special goods is limited by the orders contained in Public Works Department letter to the Government of Bombay, No. 162 R.T., dated 2nd March 1883, viz., that the through charge for the present from Delhi to Bombay is to be, for wheat 11 annas, and for other grains and seeds of the same class 11½ annas.

"A reduction of 10 per cent. may be made in these rates for 'down' or inland goods at the discretion of the Company."

64. No goods classification was referred to in this Resolution, nor was the Company apparently restricted from transferring articles from class to class. [*Vide* paragraph 18 *ante*.]

65. These maxima fares and rates were revised to the following extent in February 1886 (b):—

(c) "The maximum and minimum rates prescribed for the five separate classes of goods are altered to the following:—

"Maximum rate for any class of goods, 1 pie per maund per mile. Minimum rate for any class of goods, 0·14 pie per maund per mile.

"The present classification of goods should not be changed without the approval of the Government of Bombay, except it be in the direction of assimilation with the goods, classification now adopted by the majority of Indian Railway Administrations.

(a) Resolution of the Government of India in the Public Works Department, No. 1170., R.T., dated 23rd December 1884.

(b) Resolution of the Government of India in the Public Works Department, No. 200 R.T., dated 20th February 1886.

"The ordinary third class fares to be :—

2½ pies per mile.	.	.	{ South of Anand station. West of Viramgam;
2½ „ „ „ .	.	.	{ Between Anand and Viramgam stations and between Sabarmati and Siddhpur stations;
2 „ „ „ .	.	.	. North of Siddhpur station;

subject to the following conditions :—That the maximum fare between any station and Sabarmati shall be 2½ pies per mile, and that the fare to a station short of the junction shall not exceed the fare to the junction."

66. In these last orders a certain classification was indicated, and the Railway Company restricted from altering it; but as the maximum and minimum rate applied to *any* class, the restriction placed on the rates within the limits of 1 pie and 0 14 pie per maund per mile was not very definite.

67. In June 1886 the minimum rate of 0·14 pies was reduced to 0·12 pies. (a)

68. In clause 57 of this Contract, Government has reserved the general rights recommended to be reserved by the Select Committee of 1844, in the following terms :—

*Clause 57.*—"No claim shall be made upon the Secretary of State by the Company for compensation in respect of the prejudicial effect upon the Undertaking or the profits thereof of any Act of the Indian Legislature of general applicability for the time being in force. And the Company and the Undertaking shall be subject to the provisions of every such Act, and no claim shall be made upon the Secretary of State by the Company for compensation in respect of the prejudicial effect upon the Undertaking of any treaty, convention or agreement for the time being in force between the Secretary of State and the Government of any allied tributary foreign State, although such treaty, convention or agreement may not be of general applicability. And the Company and the Undertaking shall be subject to the provisions of every such treaty, convention or agreement as mentioned in this clause."

69. The right of Government to call upon the Company to grant facilities for through traffic to much the same extent as were required under the English Railway and Canal Act of 1854 were secured by clauses 43 and 44 as under :—

43. "The Secretary of State may from time to time require the Company to make reasonable arrangements for the interchange of traffic and rolling-stock between the Undertaking and other railways and for through booking.

44. "The Secretary of State may from time to time require the Company to allow the use of any of the stations forming part of the Undertaking for the accommodation of the traffic of any railway belonging to any other Company or to the State or to any allied tributary or foreign State upon the payment of reasonable tolls and under reasonable conditions and restrictions, and may also require the Company to make such alterations and additions as may, in the opinion of the Secretary of State, be necessary or convenient for the purposes of such accommodation upon such terms as may be agreed upon between the Secretary of State and the Company, and may also require the Company to allow junctions to be formed between any of the railways forming part of the Undertaking and railways belonging to any other Company or to the State or to any allied tributary or foreign State."

70. But no rights have been reserved to Government to call upon the Company to accept through rates to the extent laid down by the Regulation of Railways Act of 1873. Nor was any "undue preference" clause inserted in this contract, an omission which is the more remarkable, considering that this

(a) Letter from Government of India, Public Works Department, No. 643 E.T., dated 30th June 1886.

clause is found in the Bengal and North-Western Railway contract of 1882, and it must have been known that a clause to this effect was included neither in the principal contract between Government and the Bombay, Baroda and Central India Railway Company, nor in the Indian Railway Act.

*Bhavnagar-Gondal Railway.*

71. The Bhavnagar-Gondal Railway belongs to a foreign State, but I have inserted it for the sake of showing what I consider the points to be kept in view when negotiating with foreign States on Railway matters. A short Railway constructed by a foreign State may eventually become an important link in a line of through communication, and then it would simply paralyse the through traffic if the foreign State did not comply with all the ordinary regulations on such matters. The following is the text of the semi-agreement between the British Government and the foreign States on the subject of rates and fares :—

5th —“ A Committee of management to be appointed with a general Manager under their orders. The Committee to consist of representatives of the British, Bhavnagar and Gondal Governments; maximum rates and fares to be sanctioned by the British Government.” (a)

72. In November 1880 the following maxima rates and fares were fixed :—(b)

Passengers—1st class	.	.	.	.	.	.	18 pies per mile.
2nd „	.	.	.	.	.	.	9 „
Intermediate or 3rd class	.	.	.	.	.	.	4 „
4th class	.	.	.	.	.	.	2½ „
Luggage—2 pies per maund per mile.							
Carriages, maximum rate—48 pies per mile; minimum charge—R4.							
Horses, maximum rate—24 pies per mile; minimum charge—R2½.							
Dogs, maximum rate—4 annas per mile.							
Parcels, for 5 seers and under—for the first 50 miles, 4 annas.							
					Pies per ton per mile.		Pies per maund.
Goods—5th class	.	.	.	.	48	=	1·76 per mile.
4th „	.	.	.	.	34	=	1·25 „
3rd „	.	.	.	.	24	=	·88 „
2nd „	.	.	.	.	15	=	·55 „
1st „	.	.	.	.	10	=	·37 „
Special—as per special classes A and B							
of the East Indian Railway Tariff	.				8	} =	·29 „
Coal	.	.	.	.	8		
Terminal charge	.	.	.	.	R2-4 per ton	=	15·87 „
Insurance rate, 1 per cent.; minimum charge R5.							

73. The foregoing maxima were based upon the actual rates and fares obtaining at the time on the Bombay Guaranteed Railways, and the Government of India suggested that the East Indian Railway classification would on the whole be the best for adoption on the Bhavnagar-Gondal Railway.

74. Later on referring to these maxima, the Bombay Government requested that the Government of India would accord discretionary power to the Government of Bombay to increase the maxima to those fixed for the guaranteed railways; and in reply the Government of India said that it had no objection to

(a) Letter from the Government of India, Public Works Department, No. 3998 R, dated 27th September 1878.

(b) Bombay Government Resolution No. 2821, dated 18th November 1880.

permit the Bombay Government to sanction increases of rates up to the maxima allowed on the Bombay, Baroda and Central India Railway, provided that after a fair trial had been given to the existing scale of rates, the Bombay Government considered that such increase or increases were desirable in the interests of the Railway, and would not seriously interfere with the proper development of traffic. (a)

75. The British Government does not appear to have suggested that it might be necessary to impose through rates, and to call upon the Railway for through traffic facilities. Nor was it stipulated that the Railway should be worked subject to any subsequent Act of the Legislature generally applicable to Railways in British India, and without undue preference.

#### *Nizam's Guaranteed State Railway Company.*

76. Paragraph 12 of the Contract, dated 27th December 1883, between the Government of His Highness the Nizam and the Company, deals with the question of rates and fares in the following terms:—

“The rates and fares to be charged by the Company for the carriage of passengers and goods, respectively, shall not, unless otherwise agreed between the Government and the Company, be in excess of the rates and fares from time to time prevailing on the Great Indian Peninsula Railway.”

77. I conclude this means the actual rates charged to the public by the Great Indian Peninsula Railway, and not the maxima rates sanctioned for that Railway. In either case, as the Great Indian Peninsula Railway is practically unrestrained in the matter of rates and fares [*vide* paragraph 55 *ante*], no complete check is secured to the public by this clause. If the rates and fares charged by the Great Indian Peninsula Railway are fair and reasonable, the public interests are protected: and if not, the protection is incomplete. I am doubtful if the public interests should thus be placed at the discretion of two Companies who might easily combine to force up rates.

78. By clause 19, the Government right to subject the Company to any subsequent legislative Acts generally applicable to Railways is secured.

79. A “traffic facilities” clause to the following effect was inserted in the Contract:—

“38. The Company will, from time to time, upon the requisition of His Highness the Nizam, or of the Government of India, make reasonable arrangements for the use of their lines for the passage of the engines and trains of other railways for the interchange of traffic and rolling stock thereof, and for the use of any of the stations of the Company and for the accommodation of the traffic of other railways, provided that all such arrangements shall be made subject to the payment of reasonable tolls and charges and under reasonable conditions and restrictions.”

80. No “undue preference” clause was inserted in this contract.

#### *Madras Railway Company.*

81. Clause 8 of the Contract between Government and the Madras Railway Company, dated 13th August 1858, dealing with maxima rates and fares, is the same as that of the Great Indian Peninsula Railway. [*Vide* paragraph 51 *ante*.]

(a) Letter from the Bombay Government, No. 2960, dated 1st December 1880.

Letter from the Government of India, Public Works Department, No. 1639 B.T., dated 29th December 1880.

82. In Madras Government Order No. 1989, dated 18th June 1869, the following scale of maximum charges on the Madras and Great Southern of India (now the South Indian) Railways was sanctioned:—

<i>Passenger Fares.</i>								Pies per mile.
1st class ordinary	.	.	.	.	.	.	.	20
„ night fare	.	.	.	.	.	.	.	24
2nd class ordinary	.	.	.	.	.	.	.	6
„ night fare	.	.	.	.	.	.	.	14
3rd class	.	.	.	.	.	.	.	4

<i>Goods Rates.</i>								
5th class	54	pies per ton per mile	=	1·98	pies per maund per mile.			
4th	36	„	„	=	1·32	„	„	
3rd	24	„	„	=	·88	„	„	
2nd	18	„	„	=	·66	„	„	
1st	12	„	„	=	·44	„	„	
Food grains	12	„	„	=	·44	„	„	
Coal	8	„	„	=	·29	„	„	

83. The above maxima rates and fares were sanctioned, subject to reconsideration, if necessary, after two years; they however still remain in force.

84. In this case the classification was prescribed, and the Company restricted from making alterations; so that as regards this Railway, the public was completely protected from unreasonable charges. The remarks contained in paragraphs 57 and 58 apply equally to the Madras Railway.

#### *South Indian Railway Company.*

85. The text of paragraph 11 of the Contract, dated 16th December 1873, between Government and the South Indian Railway Company, runs as follows:—

“And the Company shall at all times allow the use of the railway to the public on such terms as shall be approved by the Secretary of State in Council, but the Company shall be empowered to charge such fares for the carriage of passengers and goods and such tolls for the use of the said Railway as they shall think fit, provided such fares and tolls respectively shall never exceed a maximum rate to be from time to time fixed for the same respectively, and altered if need be by the Secretary of State in Council, which maximum rates respectively shall, when such net receipts as are herein mentioned shall in any year have exceeded ten per cent., upon the whole capital outlay, be reduced in accordance with any requisition of the Secretary of State in Council in that behalf, but only with a view of limiting the said fares, rates, and tolls so far that the net receipts shall not exceed ten per cent. as aforesaid.”

86. The subsequent history of the maxima rates and fares on this line is exactly the same as on the Madras Railway, *see* paragraphs 82, 83, and 84. (a)

87. The remarks contained in paragraphs 57 and 58 apply also to this Company. (b)

#### *Oudh and Rohilkhand Railway Company.*

88. Paragraph 8 of the Contract between Government and the Oudh and Rohilkhand Railway Company, dated 2nd August 1867, deals in the following terms with the question of rates and fares:—

“\* \* \* And the Company will allow the use of the said Railway and telegraphs connected herewith to the public on such terms as shall be approved by the Secretary

(a) Order of the Madras Government, No. 1889, dated 18th June 1869.

(b) Ditto ditto, No. 74, dated 11th January 1869.



of State in Council, but the Company shall be empowered to charge such fares for the carriage of passengers and goods and such tolls for the use of the said Railway and telegraphs as they shall think fit, provided such fares and tolls respectively shall never exceed a maximum rate to be from time to time fixed for the same respectively by the Secretary of State in Council, which maximum rates respectively shall, when such net earnings as are hereinafter mentioned shall in any year have exceeded ten per cent. on the outlay, be reduced in accordance with any requisition of the Secretary of State in Council in that behalf, but only with a view of limiting the said fares and tolls so far as that the net earnings shall not exceed ten per cent. as aforesaid.

89. The maxima rates and fares of this line have on several occasions been altered, and after carefully reading the whole correspondence over, I have not been able to altogether satisfy myself as to what are the maxima rates and fares which this Railway can legally charge to the public.

90. As far as I can ascertain, the maxima rates and fares are as follows :—

*Passenger Fares.*

	Pies,
1st class (not at present in force) . . . . .	18 (a)
2nd or upper class . . . . .	9 (a)
3rd or intermediate class . . . . .	4 (b)
4th or lower class . . . . .	2½ (a)

91. No maxima have apparently been laid down for passengers' luggage, horses, carriages, dogs, parcels, &c.

92. The following goods rates were sanctioned in January 1875, as maxima, subject to reconsideration at the end of two years (c) :—

	Pies per maund per mile.
High class . . . . .	1
Middle „ . . . . .	$\frac{7}{8}$
Lower „ . . . . .	$\frac{1}{2}$

These rates were again altered in December 1875 to the following :—

	Pies per maund per mile.
High class . . . . .	1
Middle „ . . . . .	$\frac{1}{2}$
Low „ . . . . .	$\frac{1}{4}$
Special „ . . . . .	$\frac{1}{8}$

with a terminal of 2 pies per maund chargeable only for distances of 60 mile and under (d).

93. The remarks contained in paragraphs 57 and 58 apply also to this Company.

(a) Letter from Government of India in the Public Works Department, No. 3012R., dated 20th July 1878.

(b) I have inserted this rate of 4 pies per mile on the strength of a letter from the Consulting Engineer, Lucknow, to the Government of India, No. 1239, dated 12th September 1885; but the maximum of the 3rd or intermediate class was sanctioned in letter from the Government of India, No. 8012R., dated 20th July 1878, as 3 pies, and this is the maximum fare for the intermediate class shown in the table circulated with letter from the Government of India, No. 1131R.T., dated 11th November 1881. How far this letter of the 20th July 1878 cancelled that maximum intermediate fare of 6 pies per mile, specially sanctioned in letter from the Government of India, No. 1431R., dated 11th December 1863, I am unable to say.

(c) Letter from the Government of India, Public Works Department, No. 170R., dated 20th January 1875.

(d) Letter from the Government of India, No. 3224R., dated 27th December 1875.

*East Indian Railway and State Branches.*

94. Clause 16 of the Contract, dated 22nd December 1879, leasing the line to the East Indian Railway Company, runs as follows:—

“The Company shall charge such rates and fares for the carriage of goods and passengers as may, from time to time, be fixed by the Company, with the approval of the Secretary of State, provided that the Secretary of State may require the charges for the conveyance of any mineral or mineral substance, or any article of agricultural produce over distances of not less than 300 miles to be reduced to any rate not below  $\frac{1}{4}$ th of a pie per maund per mile for full wagon loads, and may also require the fare of passengers conveyed in closed carriages with seats, to be reduced to any rate not below 2 pies per mile.”

95. The clause gives full power to Government over the rates and fares. The rates and fares in force on the 1st January 1880 are the maxima the Company can legally charge, the goods classification existing at that date forms the basis of the Company's charge to the public for the carriage of any article; and every subsequent change in the rate, or in the classification, requires the express sanction of Government. (a)

The Secretary of State has just offered to this Company the same conditions as those contained in clause 26 of the Indian Midland Railway Contract, *vide* paragraph 116; and the Company has accepted these conditions. (b)

96. These rates and fares and classification govern the charges made to the public on all the lines leased to, and worked by, the East Indian Railway Company.

97. Clause 41 gives Government power as to through traffic facilities, and clause 54 reserves to Government the right of subsequent legislation of general applicability. There is no “undue preference” clause.

*Southern Mahratta Railway Company.*

98. Paragraph 20 of Contract between the Government and the Southern Mahratta Railway Company, dated 1st June 1882, deals with the question of rates and fares:—

“The Company shall charge such rates and fares for the carriage of goods and passengers as may, from time to time, be fixed by the Company, with the approval of the Secretary of State. Provided that the Secretary of State may require the charges for the conveyance of salt and coal and food grains to be reduced to any rate not below  $\frac{1}{4}$ th of a pie per maund per mile for full wagon loads, and may also require passengers to be conveyed at any rate not below 2 pies per mile in closed carriages provided with seats.”

99. The maxima rates and fares for this railway were fixed in October 1883 at the following amounts:—(c)

<i>Passengers.</i>										Pies per mile.
1st class	.	.	.	.	.	.	.	.	.	18
2nd „	.	.	.	.	.	.	.	.	.	9
3rd „	.	.	.	.	.	.	.	.	.	2½

(a) Letter from the Government of India, Public Works Department, No. 453 R.T., dated 2nd June 1880.

(b) Despatch from the Secretary of State, No. 78, dated 21st July 1887.

(c) Resolution by the Government of Bombay, No. 1698, dated 24th October 1883.

*Luggage.*

1st class	.	.	.	.	.	.	.	120 lb	} Free.
2nd „	.	.	.	.	.	.	.	60 „	
3rd „	.	.	.	.	.	.	.	30 „	
Extra luggage—2 pies per maund per mile.									
Carriages—48 pies per mile.									
Horses—24 pies per mile.									
Dogs—8 annas per 50 miles.									

*Parcels.*

Weight and size.	First 100 miles.	For every additional 100 miles or portion of 100 miles.
Not exceeding 10 lb or 1 cubic foot	3 annas	1' anna.
" " 20 " 2 " feet	6 " "	3 annas.
" " 40 " 4 " "	10 " "	5 "
" " 80 " 8 " "	12 " "	6 "
For every additional 20 lb or fraction thereof	8 " "	1½ "

Subject to a maximum charge of ₹1 on a parcel not exceeding 10lb irrespective of distance.

*Goods.*

The classification being that of the Great Indian Peninsula, the following will be the maxima :—

	Pies per 27 maunds per mile.
1st class	12
2nd "	18
3rd "	24
4th "	30
5th "	36
Salt, coal, and food grains	10

*Terminals.*

No charge to be levied for transshipment at a junction.

Maximum charge one anna per maund at each end.

*Insurance.*

Maximum 3 per cent.

Government reserved their right under clause 20 of the Contract to require the rate for food grains to be reduced to one-fifth of a pie per maund per mile.

The above maxima are subject to revision after five years from the opening for traffic of the first portion of the Southern Mahratta Railway Company's system.

100. The rights of Government in regard to future legislative action have been secured in clause 60 of the Contract:—

"No claim shall be made upon the Secretary of State by the Company for compensation in respect of any Act of the Indian Legislature of general applicability by reason of its prejudicially affecting the projected Railway or the profits thereof."

101. In clauses 46 and 47 of this Contract certain rights have been reserved with regard to reasonable facilities for through traffic, much to the same effect

but not in the same terms as the corresponding clauses in the Contract between Government and the Bombay, Baroda and Central India Railway for the lease of the Rajputana-Malwa Railway. [*Vide* paragraph 69 *ante*.]

102. There is no "undue preference" clause in this Contract.

103. In the Contract concluded between Government and the Southern Mahiatta line for the working of the Mysore State Railways, clause 29, dealing with the rates and fares, is similar to the corresponding clause in the principal contract. [*Vide* paragraph 98 *ante*.]

104. In this Contract rights were reserved to Government in clause 66 to carry out subsequent legislation of general application to railways: also in clauses 55 and 56, to demand reasonable facilities for through traffic; and an "undue preference" clause, No. 30, was inserted in the following terms:—

"The Company shall not, as between members of the public, make or give any undue or unreasonable preference or advantage to or in favour of any particular person or Company or any particular description of traffic or subject any particular person or Company to any undue or reasonable prejudice or disadvantage. The Secretary of State shall have absolute power for the purposes of this Section to decide whether any preference, advantage, prejudice or disadvantage is undue or unreasonable."

#### *Rohilkhand and Kumaon Railway.*

105. Paragraph 28 of the Contract, dated 12th October 1882, between Government and the Rohilkhand and Kumaon Railway Company, differs a good deal from the other railway contracts, in that the maxima rates and fares prescribed in the Contract itself cover nearly the whole of the traffic:—

"The maximum fares and rates to be charged by the Company for the carriage of passengers and goods respectively on the projected railway, or so much thereof as shall for the time being have been opened for public traffic, shall be as follows, that is to say:

#### *"Passenger fares.*

"1st class, 3 annas per mile; lower class, 4½ pies per mile; passenger luggage, 2 pies per maund per mile.

#### *"Goods Rates.*

Edible grains, ¼ pie per maund per mile.

"Parcels and live stock at rates not exceeding 50 per cent, over the rates for the time being in force on the East Indian Railway. All other goods, 2 pies per maund per mile."

106. The "undue preference" clause is worded as follows:—

"The Company shall not, as between members of the general public, make or give any undue or unreasonable preference or advantage to or in favour of any particular person or Company, or any description of traffic in any respect whatsoever, or subject any particular person or Company or any particular description of traffic, to any undue or unreasonable prejudice or disadvantage in any respect whatsoever."

107. The "through traffic facilities" clauses, and the clause reserving to Government the right of subsequent legislative action of general applicability to Railways, are all much the same as in the Contract with the Bombay, Baroda and Central India Railway for working the Rajputana-Malwa Railway. (*vide* paragraph 69).

*Bengal and North-Western Railway Company.*

108. Clause 25 of the Contract between Government and the Bengal and North-Western Railway Company, dated 28th October 1882, which deals with the subject of rates and fares is nearly the same as the corresponding clause in the South Mahratta Contract.

109. The following maxima rates and fares were sanctioned for this railway in March 1884, "to be subject to revision hereafter, if found desirable" (a):—

*Passenger Fares.*

	Pies per mile.
1st class . . . . .	15
2nd „ . . . . .	9
Intermediate class. . . . .	4
3rd class . . . . .	2½

Return tickets to be issued at 1½ fares.

*Goods rates.*

	Pies per maund per mile.
1st class . . . . .	½
2nd „ . . . . .	¼
3rd „ . . . . .	¼
4th „ . . . . .	5
5th „ . . . . .	1

For bullion, the rates in force on the East Indian Railway.

110. The "through traffic facilities" clauses, Nos. 34 and 35, go somewhat further than in other earlier Contracts:

"34. The Secretary of State may, from time to time, require the Company to make reasonable arrangements for the interchange of traffic and rolling stock with railways belonging to other Companies or to the State, and for through booking.

"35. The Company shall comply with all regulations from time to time prescribed by the Secretary of State for clearing through traffic with railways belonging to other Companies or to the State."

111. The clauses, No. 51, reserving the right to Government to carry out subsequent Railway legislation, and No. 30, preventing undue preference, are much to the same effect as in the South Mahratta Contract for working the Mysore Railway. [*Vide* paragraph 104 *ante*.]

*Sindia Railway and other State Lines worked by East Indian Railway.*

112. The contract concluded on the 24th April 1884 between the Secretary of State and the East Indian Railway for the working of State lines does not contain any "undue preference" clause, although this point had not been dealt with in the principal contract.

*Bhopal State Railway.*

113. Paragraph 5 of the agreement between the Bombay Government and the Great Indian Peninsula Railway, dated 20th April 1885, for working the Bhopal line deals with the question of rates and fares as follows:—

"The same rates, fares, tolls, conditions and arrangements in respect to traffic of all kinds are to be in force on the State as upon the Great Indian Peninsula Railway."

114. This agreement, though concluded so late as the year 1885, does not protect the interests of the public, because it was then well known that the maxima rates and fares fixed for the Great Indian Peninsula Railway were so high as to leave the Company practically unrestrained.

(a) Letter from the Government of India, No. 244 B.T., dated 20th March 1884.

115. The agreement contains neither an 'undue preference' clause, nor a 'through traffic facilities' clause, nor were the rights of Government to subsequent legislation specially reserved, although none of these points had been dealt with in the principal contract. The term of the contract was, however, very limited.

*Indian Midland Railway.*

116 The clause in the Contract, dated 2nd October 1885, dealing with maxima rates and fares, is of a more stringent character than in the other Railway contracts:—

" 26. The Company shall be entitled to charge the public for services rendered by way of conveyance for passengers and goods of different classes and descriptions at such rates only as shall for the time being be approved by the Secretary of State. The Company may, from time to time, and at the request of the Secretary of State, shall submit, for the approval of the Secretary of State, maximum and minimum rates within which the Company is to be at liberty to charge for such services, and the Secretary of State may approve such rates with such modifications as he shall think fit. Provided always that as often as the Secretary of State shall require the Company to make any such modification as last aforesaid he shall give to the Company not less than six months' previous notice of his intention in that behalf, in order to give the Company time to submit its views with reference to such modification. Provided also that when the Secretary of State shall declare that the case is one of public emergency, it shall be sufficient for him to give such shorter notice as under the circumstances he shall consider reasonable. The Company shall not, in making charges to the public for services mentioned in this section, calculate any such charge at a rate which shall be either above the maximum or below the minimum for the time being applicable under the section to the particular service in respect of which the same charge is made, or make any reduction by way of rebate or otherwise which shall have the effect of bringing any rate actually below such minimum. The term 'goods' shall, as regards this section, include everything conveyed on the projected railway, passengers only excepted."

117. The maxima rates and fares for the Indian Midland line have not yet been fixed.

118. The "undue preference" clause, No. 27, is the same as that in the Contract with the South Mahratta Railway for working the Mysore Railways (*vide* paragraph 104 *ante*); the "traffic facilities" clause and the clause reserving to Government the right to subsequent legislation are also much to the same effect as in previous contracts.

*Bengal-Nagpur Railway.*

119. Precisely the same remarks apply to the Contract between Government and the Bengal-Nagpur Railway Company, dated 9th March 1887, as to the Indian Midland Railway.

*State Railways.*

120. The only State Railway for which definite maxima and minima rates have been fixed is the North-Western Railway. On this system the maxima and minima rates and fares are as follows:—

*Passenger Fares—*

	Maximum. Pies per mile.	Minimum. Pies per mile.
1st class . . . . .	18 . . . . .	12
2nd „ . . . . .	9 . . . . .	6
Intermediate class . . . . .	4½ . . . . .	3
3rd class . . . . .	3 . . . . .	2

*Goods Rates—*

	Maximum. Pies per maund per mile.	Minimum. Pies per maund per mile.
5th class . . . . .	1	1
4th „ . . . . .	$\frac{5}{8}$	$\frac{5}{8}$
3rd „ . . . . .	$\frac{3}{4}$	$\frac{3}{4}$
2nd „ . . . . .	$\frac{1}{2}$	$\frac{1}{2}$
1st „ . . . . .	$\frac{1}{3}$	$\frac{1}{3}$
Coal, edible grain, and other low priced staples carried at special rates . . . . .	$\frac{1}{3}$	$\frac{1}{10}$

121. The measures taken on the State Railways in regard to maxima rates and fares, undue preference, &c., &c., although far from complete, are not of much importance from the point of view I am here considering, for Government has the power of immediately rectifying any point that appears unsatisfactory on its own railway system.

122. After a perusal of the above, it will probably be admitted that the question of rates and fares has not at present received in India the close attention that has been paid to it in other countries. Beginning our railway system after what might be termed the experimental stage of English Railways, not only have we failed to make use of the experience there gained; not only have we repeated all their mistakes; but we have, to the present time, neglected to take some of the measures to place matters on a more satisfactory footing, which have from time to time been recommended to Parliament by Select Committees of the House, and which for years past, both in England and in America, have been enforced by legislative enactment.

123. I have, in paragraphs 1 to 49 *ante*, given the principles that I think should be accepted for the working of the Indian Railways. I think it is important that these or any other principles as may be accepted by the Government of India should be definitely laid down, in order that the Local Governments, the Consulting Engineers and the Managers of State Railways may all work together with a common aim in view, and that in the future some substantial progress may be made towards uniformity in Railway working in matters in which uniformity is essentially necessary in the interests of the public.

124. Before entering into details, I should like to say a few words in regard to the Traffic Conferences which have hitherto been the sole means tried in this country to secure some uniformity in Railway working, and particularly in regard to the position which Government should assume in regard to them.

125. In the first place, I think, they have failed to some extent owing to Government not having openly accepted any definite principles.

126. In the next place, I consider that care should be taken not to go in any case beyond recognised Railway practice at home. The aim should be, not to secure absolute uniformity, but that reasonable amount of uniformity that Railway practice all over the world has shown to be compatible with a due regard to the rights of the Railway Companies. There has been, in my opinion, on too many occasions an attempt on the part of Government to drive principles home to their logical conclusion, regardless of consequences. The whole correspondence between the Secretary of State and the Home Boards shows that as long as we keep strictly within the four walls of English practice, we shall meet with support.

127. In the third place, caution should be taken to prevent even a suspicion being aroused that the influence of Government is being exercised to force the Railway Companies into certain courses of action against their own interests.

Whatever uniformity may be secured will be secured only with the full consent of the Companies concerned. My opinion, therefore, is that Government should appear in these conferences only in its capacity as a Railway proprietor, and not as the supreme governing authority of the country. In other words that the only Government officers that should attend these conferences should, be the delegates representing the large State Railways, the Director General appearing as representing the aggregate mileage of all the lesser State lines. At the last Traffic Conference, I think it was a mistake to allow an officer of the Financial Department or any other outsider not representing railway interests to have a vote on such subjects as the fixing of railway rates.

128. Fourthly, there is, it appears to me, a radical error about the constitution of these conferences which more than anything else robs them of the usefulness they would otherwise possess. They occur, from time to time, every two or three years;—certain subjects are discussed;—and certain decisions arrived at;—the delegates separate;—and there apparently is an end of the matter. As Manager of one of the State Railways, I never could even subsequently find out which Railways had, and which had not, accepted the decisions arrived at. There is no recognised authority responsible for seeing that the decisions are carried into effect, even by the Companies that agree to them; and no attempt is made to see how far the objections raised by those who disagree can be met or compromised. If a proposal is not carried unanimously at the time, it is practically shelved till the next conference.

129. At this rate, progress will be extremely slow, the distances in India being too great to allow of the delegates frequently meeting. There seems to be a general impression that the work of fixing rates and deciding between the conflicting interests of the various Railways is getting to be too difficult a work, for Government to carry out, and that some body independent of the Government is required to settle such questions (a). On the other hand, it should be recognized that all healthy institutions are developed slowly from small beginnings.

130. A beginning has already been made in assembling these conferences and this could now easily be continued further by simply appointing all the large Railways as members of a standing Committee, to work under certain rules, and to consider and express opinions on matters brought before it, somewhat like the meetings held by the General Managers of Railway parties to the Clearing House. The Director General of Railways should be appointed *ex-officio* Chairman of the Committee. (I propose this, not because I am willing to add to my responsibilities, which, I am satisfied, are at present sufficient, but simply because the Director General of Railways has always been Chairman of these conferences, and the Railway Companies have got accustomed to the fact.) One of the Assistants to the Director General of Railways should be Secretary, and his business should be simply to report progress; to put before each Railway Company the views of the rest; and bring the matters discussed into a state complete enough for an opinion to be expressed on it. In all this I do not mean that any Railway should be compelled to adopt anything decided upon by the majority any more than it would be in England. Each administration should be allowed to dissent from regulations accepted by the majority, or to withdraw from regulations to which they have previously assented: each should have full power to manage its own business. I should, however, trust a great deal to time, and to the tranquillizing effect of the steady pressure

(a) Despatch to the Secretary of State, No. 120, dated 7th August 1885.



of the majority continuously applied. The Committee should have no power of fixing rates, except when applied to for the purpose of arbitrating between two Companies, nor should it have any executive functions whatever, it should be simply a medium for recording and distributing collective opinions.

131. In this way a beginning would be made very much in the same way as the Clearing House Committee was itself started. The proposal is in fact nothing more than the 'modified plan on a more limited basis' to be 'prepared in communication with the representatives of the Companies' which was suggested by the Secretary of State in his Despatch No. 16 of the 5th February 1886.

132. *Principles I to IV.—Extent and amount of Government control over rates and fares.*—At present it would be difficult to give any satisfactory reason for the extreme divergence in the amounts of the maxima rates and fares that have been and are fixed for the various Indian lines.

133. The mere fact that in the year 1868, 12 pies per mile was fixed as the maximum 2nd class fare for *all* the Railways in Bombay, and 9 pies for *all*

\* Subsequently raised to 6 the Railways in Bengal, and 5\* pies for *all* the Railways pies.

in Madras, proves conclusively that none of those factors were considered which alone have been recognized by the Courts of Law as justifying preferential rates and fares in different districts.

134. Similar divergences are shown in the goods rates. It is not easy to account for the following differences in the maxima goods rates fixed at the same time :—

							<i>All the lines in Bombay. Pies.</i>	<i>All the lines in Madras. Pies.</i>
5th class	.	.	.	.	.	.	54	36
4th „	.	.	.	.	.	.	36	24
3rd „	.	.	.	.	.	.	24	16
2nd „	.	.	.	.	.	.	18	14
Coal	.	.	.	.	.	.	10	8

Not only does the amount vary, but the extent of ground covered by the maxima rates and fares fixed. I do not know why maxima rates have been laid down for horses, carriages, and dogs on the Bombay lines, and apparently on no other Railways. Nor why no other lines but the Railways administered by the Bombay Government should be restrained in the matter of terminals and insurance rates. The Oudh and Rohilkand Railway is restrained as regards terminals but not as regards insurance.

135. A definite restriction has been placed on the rate for passengers' luggage in the case of the Bombay, Baroda and Central India Railway, the Great Indian Peninsula Railway, the Bhavnagar Railway, the Rohilkhund and Kumaon Railway and the South Mahratta Railway, but on no other lines. In fact, on the Oudh and Rohilkhund Railway the Government specifically said it would not interfere (a).

136. As regards low class special goods in December 1879, the maximum rate agreed upon in the Contract with the East Indian Railway was  $\frac{1}{6}$ th pie; in July 1881, with the Bengal Central Railway, it was  $\frac{1}{3}$ rd pie; in June 1881, with the Southern Mahratta Railway, it was  $\frac{1}{5}$ th pie; and in December 1882, it was also  $\frac{1}{3}$ th pie, but under different conditions. In fact, the articles specifically mentioned, the rate and the conditions, seem to vary in almost every case.

137. In the case of the Southern Mahratta Railway under the contract the whole of the maxima rates depend on the actual rates in force from time to time

(a) Letter from Government of India, Public Works Department, No. 3012B., dated 20th July 1878.

On another line, so that it is within the power of Government to practically take all control over the rates out of the hands of the management of the line. In other cases, such as the Rohilkhand and Kumaon Railway, only some of the maxima rates depend on the rates prevailing on another line; and in one case, the Bareilly-Pilibhit line, the Government has the power of reducing the rates to those prevailing on other State Railways in the North-Western Provinces.

138. I deem it even more important that maxima and minima rates should be fixed for State and especially for Provincial State Railways than for private Companies, for the private Railway Companies are supervised by Boards composed of business men, whereas the Provincial Railways, it appears to me, are not sufficiently controlled.

139. For some Railways only maxima rates are fixed; for others both maxima and minima. In some cases the maxima rates and fares have been notified in the Gazette; in other cases they have not. Considering the importance which successive Select Committees have attached to the fact of the public being able to obtain information as to the maxima rates and fares which Companies may legally charge, I think it would be advisable that the maxima rates and fares fixed for every Railway should be notified in the Gazette, and a schedule of these rates inserted in the Coaching and Goods pamphlets sold to the public.

140. As regards the restriction that it may be considered necessary in the interests of the public to place on the power of Railway Administrations in the matter of their rates and fares, it seems advisable to at once consider and to decide how far these restrictions should extend, and what should be the *normal* maxima rates and fares to be referred to when prescribing maxima rates and fares in future. I do not think it is possible to lay down any actual maxima which would be applicable to every case. Ghât lines would certainly require higher maxima than lines in the plains. The probable cost of the line and of the working—the length of the line—the amount and description of the traffic to be moved—and the average wages paid in the districts traversed—might all be properly considered as factors in determining the actual maxima to be fixed; but these factors should be referred to some recognized standard, and their influence determined on some clear principles. In other words, I would suggest that a model schedule of maxima rates and fares be drawn up, which should not be departed from unless due cause were shown.

141. *Classification of goods.*—There is probably no subject in connection with Railway working over which the control of Government has been weaker. Every Railway in India has more or less a different classification, and to the present time not even a uniform classification for through booking has been agreed to.

142. A start in the direction of a uniform classification for through booking was made in the Traffic Conference of 1884, and certain decisions were arrived at; but owing to objections brought forward, and rightly brought forward, by the Great Indian Peninsula Railway, nothing appears to have been done since. Nothing practical, at all events, has yet been effected. I do not find that there is any uniform classification generally adopted by the State lines, nor that Government has any general classification prepared for adoption by new Railways about to open. Every day the matter gets worse instead of better, and the general apathy shown to this important subject seems to me unaccountable.

143. My suggestion is that this subject be vigorously pursued by the Standing Committee. I have suggested in paragraph 130 that a general classification of through goods be drawn up;—that all consenting railways be asked to

print in their Goods Tariffs all such articles in Roman, of which the classification and rate is the same as that in the general classification;—that special and exceptional articles be printed in Capitals; that these exceptions be taken up one after the other, and the matter pursued until in each case definite grounds are recorded for the exception being retained; that with regard to the State Lines, exceptions be only allowed when strong reasons are alleged for their continuance;—and that all lines newly opened be obliged to accept the general classification with only such exceptions as will allow them to compete fairly with other lines.

144. In this way, I believe that a material amount of 'uniformity could be secured, especially on the East Indian, the Bombay, Baroda and Central India, the Bengal and North-Western, the Indian Midland, and the Bengal-Nagpur Railways. The union of these with the State and probably with some of the Madras lines would form a very strong body, which would get stronger and stronger with the affiliation of each new Railway.

145. *Terminal charges.*—Terminal charges appear to have been recognized on the Indian Railways from the very first although the only lines for which a maximum charge for terminals would appear to have been definitely fixed are the lines in Bombay, and the Oudh and Rohilkhund Railway. The maxima there fixed are the following:—

			Per ton. Per maund.	
			₹ a. p.	Annas.
Great Indian Peninsula Railway, at Bombay	.	.	5 0 0	2·94
Ditto ditto at all other stations	.	.	2 8 0	1·47
Bombay, Baroda and Central India Railway, at Bombay	.	.	5 0 0	2·94
Ditto ditto at all other stations	.	.	2 8 0	1·47
Bhavnagar Gondal Railway, at all stations	.	.	2 4 0	1·32
South Mahratta Railway, ditto	.	.	...	1·00
Oudh and Rohilkhund Railway	.	.	2 pies per maund.	

146. An attempt was made at the Traffic Conference of 1884 to fix a uniform rate at *all* stations for *all* descriptions of through traffic not carried at special rates without terminals, leaving the different Railways free to charge what they liked (within their fixed maximum charge, if any) for local traffic. The rate proposed was 6 pies per maund; or 3 pies for the forwarding, and 3 pies for the delivering, Railway.

147. The proposal was voted against by the East Indian Railway, the Oudh and Rohilkhund Railway, and the South Indian and, in my opinion, most properly resisted by the Great Indian Peninsula Railway on the grounds—

1st,—that the rate did not take into consideration the varying cost of handling different descriptions of traffic at different stations; and

2nd,—that the attempt to force by the verdict of a majority any rate on any railway without its full consent would be prejudicial to the rights of that railway as secured by its contract.

148. Both pleas are perfectly justifiable. The determination of a uniform terminal charge at *all* stations for *all* description of traffic is contrary to the English Acts of Parliament, and to American law, in which the subject is more definitely dealt with. It also runs counter both to the weight of the evidence taken before the Select Committee on Railways (Rates and Fares) in 1881 and 1882, and to the recommendations of that Committee put forward in 1882 [*vide* paragraph 20 *ante*].

149. *Principle V.*—The attitude of Government in respect to this principle is at present somewhat half-hearted and undecided; and it is perhaps difficult

to see how this can be otherwise as Government has to regard the matter not only theoretically from the point of view of the Government of the country, but also from a business point of view as being the proprietor of a number of the railways and directly interested in nearly the whole of them.

150. After accepting the principle that "an equalization of rates from Delhi and Agra to the ports of Calcutta and Bombay must form the basis of consideration of all changes in the through rates of all traffic," (a) this principle was modified to "mileage tempered with the proper commercial principle of an even return on the capital expended." (b) A week later, "the charges *via* the Rajputana route from Agra and Delhi to Bombay were not to be lower than the charges for similar goods to Howrah." (c)

151. In March 1882, the Secretary of State practically disposed of all these principles, and apparently favoured the adoption of principle No. V, pure and simple. (d)

"3. It would appear [from these papers that, recognizing competing interests between Calcutta and Bombay, you were in favour of an equalization of rates on the two routes mentioned, but that you subsequently considered that they should be regulated on the principle that the profits on the capital expended on each undertaking should be the same.

"4. I am not aware of the reasons which induced your Government to adopt your views, but I cannot but think that the natural course of traffic on two lines, proceeding from the same place to port on different sides of the continent of India, should not be interfered with by any idea of adjudicating on the rivalry between them, and that the advantages due either to geographical position or other circumstances should furnish no reason for imposing on either artificial restrictions, in the shape of enhanced rates, in order to produce an equal return of net profits on the capital of both.

152. The Government of India then came "to the conclusion that in fixing the charges for the carriage of the same commodity on different railways, the cost of carriage cannot be neglected, nor can this important element be omitted in arranging the division of through rates between lines working in connection." The equal mileage rate principle was condemned. (e) In the meantime the Government of Bombay had consistently supported the principle of equal mileage rates. (f)

153. The Secretary of State again disagreed with the basis proposed. His opinion was that the rates on the Indian Railways should be dealt with as nearly as possible, as they would be by independent Companies;—that Managers of Railways should be left to fix such rates as they might deem most advantageous for their respective lines;—that the interests both of the Railways and of trade generally would be better served by accepting the legitimate consequences of competition;—and that the interposition of Government would be justified only in cases where Companies, under the security of a guarantee, might fix rates below what would cover cost of transport with a margin of profit. (g)

(a) Letter from Government of India, Public Works Department, No. 1119 R.T., dated 26th September 1881.

(b) Letter from Government of India, Public Works Department, No. 1192 R.T., dated 19th October 1881.

(c) Letter from Government of India, Public Works Department, No. 1216 R.T., dated 26th October 1881.

(d) Despatch from Secretary of State, No. 41 R., dated 9th March 1882.

(e) Letter from the Government of India, Public Works Department, No. 472 R.T., dated 19th May 1882.

(f) Letter from the Government of Bombay, No. 1476, dated 22nd July 1882

(g) Despatch from Secretary of State, No. 132 R., dated 19th October 1882.

154. The Government of India then unreservedly accepted the principles advocated by the Secretary of State; but while accepting them in theory, the Government fixed a minimum rate between Delhi and Bombay, allowing the other competing railways to subsequently decrease their rates as they pleased; (a) until it has come about that while the original contention between the two ports of Bombay and Calcutta was whether the difference in rate should be as much as one anna, the rate to Bombay for wheat is now 11 annas per maund, whereas that to Calcutta is 8.48 annas. In other words, there is at this date a difference of over  $2\frac{1}{2}$  annas. With a fixed minimum rate on the Bombay, Baroda and Central India and the North-West Railways, and with the rates on the East Indian Railway directly in the hands of Government, it cannot be said that Principle No. V is yet allowed its full development in India. It certainly cannot be said that complete expression has been given to the following views of the Secretary of State:—

"I observe that the chief point on which stress is laid in Your Excellency's letters on this subject is the importance of obtaining some means of settling the rates by different routes competing for the traffic which lead to the various seaports. It appears to me that it is beyond the proper scope of the duties of the Government of India to interfere in such matters otherwise than by exercising the influence it possesses whether by reason of its powers under the contracts with the various Companies, or as the owner of the State Lines of railway, or as the representative of the general interests of the country." (b)

155. I doubtfully incline to the belief that it would be better for Government to accept Principle V unreservedly, and to leave the Railway administrations to fix their own rates and fares, within their maxima, and subject to prescribed general principles, as may seem most advantageous for their respective lines. But in doing this, I assume that as between two competitive routes, the Clearing House principle that the shortest and cheapest route between the two points fixes the rate, is accepted.

156. I also recommend another additional safeguard. At present, I regret to see that a system of what I may term 'jockeying' other Railway administrations has grown up under the following clause of the conference rules:—

"Advices shall be sent of all changes on or before the 20th of each month, and of alterations consequent thereon by the receiving Railway not later than the end of the month. Advices so sent become operative one month after the 1st of the month following the date of advice."

Railway Administrations now appear to try (especially towards other rival Railway Administrations which are somewhat hampered in making changes of rates by having to apply to Government before being allowed to do so) to arrange for sending out their notice of the decrease of rates so late that the other administration has not time to notify their corresponding reduction, and thus to secure a whole month with rates less than the rival Company. This should be summarily put a stop to. I think it is essential that every administration before carrying out a reduction in a competitive through rate should have before it full information as to what corresponding reductions the other administrations intend to make if the reduced rate is introduced. This more than anything else would tend to stop the disputes and the ceaseless changes of rates now going on. The length of notice now given is not long enough to allow of the railways interested in the proposed reduction communicating with

(a) Letter from the Government of India, Public Works Department, No. 162R.T., dated 2nd March 1889.

(b) Despatch from Secretary of State, No. 16 Ry., dated 25th February 1886.

one another or with Government before notifying the corresponding reduction. In England, changes of classification are considered only once a year. In India, I would recommend that all changes of rates come in quarterly on the 1st January, April, July, and October; and that the system be modified so as to compel Companies to give much longer notice of proposed changes than they do now; changes to be brought in force otherwise than quarterly as proposed, only with the full consent of all Companies concerned.

157. *Principle VI (A).*—The ‘undue preference’ clause, though introduced in English law in 1854, was not inserted in the Indian Railway Act of 1879, nor in any Railway contract previous to the year 1882 when it was entered for the first time in the contract with the Rohilkhand and Kunpaon Railway. Subsequent to this, it has been forgotten in the contracts with the Nizam’s Railway; with the East Indian Railway for working State lines; with the Bombay, Baroda and Central India Railway for working the Rajputana-Malwa line; and with the Great Indian Peninsula Railway for working the Bhopal line. It is probable, however, that any Court would consider it to be part of the common law of the country; and an “undue preference” clause has been inserted in the draft Railway Act.

158. It seems to me that there is a good deal of undue preference shown in India, which the Consulting Engineers should be instructed to stop. As a glaring case, I might mention the salt rates from Sambhar to and *via* Achnera as compared with the rates from Sambhar to and *via* Agra introduced by the Bombay, Baroda and Central India Railway on the 20th October 1886, which were specifically complained of by the Agent of the East Indian Railway in his letter No. 1066G., dated October 30th, 1886. In this case Government apparently did nothing, although it is difficult to imagine a more striking instance of undue preference between the East Indian Railway and the Cawnpore-Achnera Railway; the whole object of the preferential rate to Achnera being to benefit the Cawnpore-Achnera line at the expense of the East Indian. On the other hand, on the East Indian Railway, in February 1885, the through rate for salt from Howrah *via* Benares, 475 miles, was ₹31 per 100 maunds. The through rate from Howrah *via* Patna, 332 miles, was ₹38 per 100 maunds. This was complained of by the Agent of the Bengal and North-Western Railway in his letter No. 6823, dated February 3rd, 1885.

159. The matter seems to need Government intervention, as these preferential rates on the East Indian Railway show how, in moments of temptation, railway administrations slide back from the high principles they have previously expressed. In the year 1882, the Agent of the East Indian Railway wrote:—

“This discrimination in favour of traffic *via* Agra to Bombay by means of a lower rate per mile for a shorter distance is directly opposed to the recognized practice.” (a)

And so late as the year 1884:—

“And since we could not quote this rate from Delhi, and at the same time maintain in force higher rates for stations below Delhi with a shorter lead to Howrah, we had also to consider how the rates for these stations should best be adjusted.” (b)

160. *Principle VI (B).*—No “traffic facilities” clause was entered in any of the Contracts previous to the year 1879, although it was introduced in England in 1854. Even now, the latest Contracts do not give Government the power

(a) Letter from Agent, East Indian Railway, No. 527G., dated 3rd June 1882.

(b) Letter from Agent, East Indian Railway, No. 950G., dated 28th August 1884.

of ordering Railway Administrations to accept through rates which were given to the English Railway Commissioners by the Railway and Canal Traffic Act, 1873. Nor does the draft Railway Act contain any provisions to this effect.

161. This is more to be regretted, because our present experience shows that these are the powers which are more specially required by Government in dealing with the disputes now arising between the various Railway Companies. In India, the almost universal practice is to make the through rates the sum of the local rates; in other words, lengths of line belonging to two or more Railway Administrations are *not* worked as if they belonged to a single administration.

162. The disputes between the Oudh and Rohilkhand Railway and the East Indian Railway; between the Bengal and North-Western Railway and the East Indian Railway; and between the North-Western Railway and the Bombay, Baroda and Central India Railway, are all questions of quoting through rates. The matter seems to be one of the very greatest importance for the new Railway Companies, such as the Bengal and North-Western Railway, the Indian Midland Railway, and the Bengal-Nagpur Railway, which have all been floated in England, under the tacit assumption that the Government of India will see to their getting their rights in the same way as the Railway Commissioners would have done at home. They are all cut off from the sea-board by other powerful Companies, and unless Government intervenes and insists on these Companies quoting through rates, the traffic of all these new Companies will be most prejudicially affected. The story of the way the rates of the East Indian Railway have been worked, first, to make as much as possible of the Oudh and Rohilkhand Railway through traffic come on the East Indian Railway at Aligarh instead of Benares, and now to make the traffic which is being competed for between the Oudh and Rohilkhand Railway and the Bengal and North-Western Railway come on the East Indian Railway at Benares instead of Digha Ghat, is not a very bright page in the history of Indian Railways.

163. I think it is to be regretted that Government did not unreservedly accept the principles for working through traffic put forward by Sir B. Leslie in his letter No. 633G., dated 25th August 1880. They are all that could possibly be required:

"The various Railway systems should as far as possible serve the country as if they were under one management, and the dealer in country produce should not be hampered in his operations by the necessity to base his calculations on as many different scales of rates as there may be railways between the starting point and destination. This can only be attained by adopting a uniform scale of rates for special or lower class goods which form the bulk of the country trade, and where there are alternative routes, by sending goods according to sender's option. The adoption of a uniform scale of rates for special class goods for the whole of the districts served by East Indian Railway and Oudh and Rohilkhand Railway will in my opinion contribute largely to develop traffic.

"It will be in my opinion to the material advantage of the two Railways and interests of the public to adopt a uniform gradation scale of rates for special class goods both for through and local traffic on both Railways; the earnings from through traffic to be divided in the ratio of the mileage."

Had Government accepted these principles in the year 1880, it would probably not have been necessary in the year 1885 to recommend to the East Indian Railway Company a return to the principles which their Agent himself had advocated five years previously. (a)

(a) Letter from the Government of India, Public Works Department, No. 429R.T., dated 15th May 1885.

164. I strongly recommend that the powers secured under the Railway and Canal Traffic Act, 1873, be secured to Government by the new Railway Act; and that the whole influence of Government be exerted to make the various Railway Administrations in India carry into practice the measures required in the general interests of the public. At the very least, Government should see that the State lines are worked on proper principles.

165. *Principle VII.*—Until the Courts of Law in India give a decision on the legality or otherwise of charging a lower or an equal rate for a longer than for a shorter distance, it would be as well for Government to instruct their Railway Officers as to the view they would wish taken on this subject.

166. The Railway Commissioners in the Denaby Main Colliery case objected to the same rates being charged for a difference of only 17 miles. What they would say to the East Indian Railway in this country charging the same rates to Howrah from Delhi and Cawnpore, a difference of 270 miles, it is almost impossible to conceive, especially as this Railway charges higher rates from the intermediate stations. For instance, the present rate for wheat from Delhi to Howrah, 954 miles, is ₹53 per 100 maunds; the rate from Cawnpore, 684 miles, is also ₹53; on the other hand, the rate from Aligarh, 876 miles, is ₹57; and from Phaphund, 735 miles, and a whole group of stations near it, ₹60. It seems to me that this difference in rates *does* constitute *undue* preference between merchants residing at Delhi and Phaphund and elsewhere. The rate for salt from Howrah to Cawnpore, 684 miles, is ₹45, whereas the rate from Howrah to Fatehpur, 637 miles, is ₹54. And many other instances of preferential rates could be mentioned.

167. It may here be noticed that in his letter No. 2357, dated 29th June 1882, the Consulting Engineer, Calcutta, actually argues in favour of lower rates for longer distances; but the principle was not admitted by the Government of India, in their reply No. 678R.T., dated 11th July 1882. This is the only indication of any leaning on the part of the Government, either to one side or the other, that I have been able to find on record.

168. It is to be remembered that Mr. Mundella's draft English Railway Bill to a certain extent legalized grouping; but at the same time, clause 25 proposed a radical alteration in the law by throwing upon the Railway Company concerned the burden of proving that any disputed preferential rate did *not* amount to undue preference. This question should be settled in the draft Indian Railway Act.

169. Some of the recommendations I have brought forward cannot obviously be introduced without either the consent of the older Companies or Legislative action. As regards the consent of the Companies, I think the various questions should be kept in mind, and whenever the Companies apply for any additional privileges or powers, these privileges or powers should be given only on the Company agreeing to accept such reasonable restrictions as Government may consider are necessary in the interests of the public. For instance, at the present time, I would certainly give the East Indian Railway greater liberty of action in regard to rates on condition of their accepting the general principles approved by Government.

170. And lastly, I think the record of the measures taken by Government in respect to rates and fares shows forcibly the necessity of permanently attaching to the head-quarters of the Government of India an officer intimately acquainted with the detailed railway management, and with the working of railway tariffs generally.



171. In conclusion, I will briefly recapitulate my recommendations:—

- I.—That a model schedule of maxima rates and fares be drawn up, to be departed from only on due cause being shown :
- II.—That the maxima rates and fares fixed for each railway be notified, and be available to the public :
- III.—That a general goods classification be drawn up for acceptance by all new companies :
- IV.—That the principles under which Railway Agents and Managers may regulate their rates within their maxima be decided upon, and advised to all concerned :
- V.—That *undue* preference be put a stop to :
- VI.—That powers be secured to Government in the new Railway Act to order companies to accept through rates :
- VII.—That a Standing Committee of Railway Managers be formed to secure a reasonable amount of uniformity in working :
- VIII.—That all proper influence be brought by Government to induce the various Railway Companies to accept the principles decided upon, *vide* IV above; and also the conclusions generally accepted by the Standing Committee, *vide* VII above :
- IX.—That an experienced traffic officer or Railway Manager be permanently attached to the head-quarters of the Government of India.

Resolution by the Government of India, Public Works Dept., No. 1101 R. T., dated 17th October 1888.

### Railway Rates and Fares in India.

Read again—

- Despatch from the Secretary of State, No. 132 Ry., dated 19th October 1882.
- Public Works Department No. 162 R. T., dated 2nd March 1883, to the Government of Bombay.
- Public Works Department Resolution No. 655 R. T., dated 18th July 1884.
- Public Works Department Resolution No. 200 R. T., dated 25th February 1886.
- Despatch from the Secretary of State, No. 16 Ry., dated 25th February 1886.
- Public Works Department Resolution No. 1446 R. T., dated 12th December 1887.

Read also—

Letter from the Director General of Railways, No. 775 T., dated 20th August 1887, and extract from enclosure.

**OBSERVATIONS.**—At the Railway Conference of 1884 it was suggested that a General Classification should be adopted by all Railways, to include all articles carried on any railway and recognized by a distinctive name. It was also proposed that for *purposes of through booking*, commodities entered in the General Classification list should be subdivided into two sections. That in Section I should be included all articles, the carriage of which was of real importance to any railway as a source of revenue, and that in respect of articles named in this section each railway should retain entire discretion in fixing or adopting rates for their carriage over the Home line, or any portion of the Home line included in the through journey. That in section II should be included all other articles in the General Classification, in regard to which the traffic was of no great importance, and that in respect of these a scale of common mileage rates should be adopted in through booking.

2. It was further provided that any Railway should be at liberty to transfer any item of through traffic, which at any time became of importance, from Section II to Section I, on giving three months' notice of such transfer; but that transfers from Section I to Section II should be made only by general agreement. Although these proposals were agreed to by a majority of the Delegates at the Conference, little or no action has since been taken in regard to them by any of the Railways concerned.

3. The intention of Public Works Department Resolution No. 1446 R.T., dated 12th December 1887 (Railway Rates and Fares in India), paragraph (c), was, as far as was practicable, to bring into operation the proposals brought forward at the Conference of 1884 and enumerated above.

4. The Railway Conference, which has just concluded its sittings, has to some extent modified the decisions of the Conference of 1884. Resolutions bearing on the subject of the General Classification of, and the rates for, goods, were passed in the following terms:—

*Resolution No. 52.* "That the Committee is of opinion that a uniform classification and uniform conditions are very desirable. The Committee is not prepared, however, to deal with the question at the Conference, but considers that each railway should endeavour to make its own classification and conditions uniform with others, as far as may be practicable."

"That all articles, of which the classification is uniform on all Railways, be printed in small capitals."

[ "It was stated that the Oudh and Rohilkhand State Railway, the Eastern Bengal State Railway and the South Indian Railway agree to adopt, for purposes of through booking, the five and special classes of goods obtaining on other Railways." ]

*Resolution No. 53.*—"In respect to through goods traffic, each Railway shall publish tables of rates from each of its junctions with foreign lines to every station on its own system. Terminals, when charged, shall be included in the rates quoted."

5. The Conference of 1888, while making a considerable advance towards the acceptance of uniform charges for various descriptions of through coaching traffic, has thus abandoned the scheme, accepted by the Conference of 1884, for uniform rates for all the articles which would have been included in the proposed Section II of the General Goods Classification. It is, therefore, necessary to somewhat modify Resolution No. 1446 R. T., dated 12th December 1887, with the object of making it as far as possible in accord with the conclusions arrived at by the Conference of 1888.

RESOLUTION.—His Excellency the Governor General in Council is accordingly pleased to rule—

(a) That in *local* booking of goods, every Railway Administration shall be free to fix its own rates for all staples, subject to the maximum rate and the minimum rate of  $\frac{1}{16}$ th pie prescribed by Government.

(b) That the Eastern Bengal State Railway and the Oudh and Rohilkhand Railway, on its transfer to the State, shall, as soon as is practicable and convenient, adopt, for *through booking purposes*, the five and special classes of goods generally obtaining throughout the Indian Railway system. It is understood that the South Indian Railway Company also agrees to adopt this classification for through booking. If this be so (these three having been hitherto the only important exceptions), the uniformity of the division of goods for through booking into five and special classes will be practically secured throughout India.

- (c) That in all cases in which the East Indian Railway and the Great Indian Peninsula Railway have come to an agreement as to the inclusion into one of the five classes of any articles, the State Railways and those Railways\* over which the Government has reserved authority with regard to the regulation of rates, shall accept the same classification, provided that the receipts from such article are not of importance as a source of revenue to the railway concerned.
- (d) That in the event of the receipts of any such article being of importance as a source of revenue, the Governor-General in Council will be prepared to consider an application from the Railway Administration interested, for the inclusion of the article into a different class, or to its being carried at a differential (or sliding scale) rate.
- (e) That where an article is carried on the Great Indian Peninsula and East Indian Railways at *special* rates, or, when an article is not included on both these railways in the same class, every railway will be free to classify the article in through booking from time to time as thought desirable. But in such cases where the receipts from such articles are unimportant, the classification adopted by the East Indian Railway should be followed by the State Railways and the three railways indicated in the margin of clause (c), *ante*.
- (f) So long as an article is under clauses (c), (d), or (e) included in any of the five classes, it will on the State Railways and on the Railways indicated in clause (c) in respect of through booking, be carried at the rates per maund per mile prescribed in the schedule that accompanied Resolution No. 1446 R. T., dated 12th December 1887.
- (g) It will be convenient, whenever the following special (not differential) rates are used on State Railways, that the following nomenclature should be adopted in order to distinguish them :—

Clause A —  $\frac{1}{2}$  pie per maund per mile.

"	B — $\frac{1}{3}$	"	"
"	C — $\frac{1}{6}$	"	"
"	D — $\frac{1}{4}$	"	"
"	E — $\frac{1}{8}$	"	"
"	F — $\frac{1}{9}$	"	"
"	G — $\frac{1}{10}$	"	"

2. Further orders will be passed regarding the resolutions of the Conference prescribing uniform charges in through booking for certain descriptions of coaching traffic, as soon as it is known how far these proposals are accepted by the Boards of Directors in England, the effect of one of these resolutions being to alter the rates for parcels laid down in the schedule of maximum and minimum rates and fares, which accompanied Resolution No. 1446 R. T., dated 12th December 1887.

3. In giving these enlarged powers in regard to rates, His Excellency the Governor General in Council trusts that Railway Administrations will realize the necessity of acting on the general principles which are accepted by the Legislature in England, and which the Railway Commissioners in that country are empowered to enforce; and will recognize that, in through booking, the various Railway Administrations should serve the country as though they were

under one management ; and that, when there are two alternative routes, the shorter should fix the minimum rate for both routes.

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**ORDER.**—Ordered, that this Resolution be communicated, for information

The Governments of Madras, Bombay, Bengal, and the North-Western Provinces and Oudh,

The Chief Commissioners of the Central Provinces, Burma, and Assam, The Resident at Hyderabad.

The Director General of Railways.

The Consulting Engineers to the Government of India for Railways, Calcutta, Lucknow, and Central Division,

and guidance, to the Governments and Administrations and Officers noted in the margin, also for in-

formation to the Government of the Punjab, the Agents to the Governor General for Rajputana, Central India and Baluchistan, and the Accountant General, Public Works Department.

Ordered also, that this Resolution be published in the Supplement to the *Gazette of India*.

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## 3.—Railway Stores.

No. 256 (Financial), dated 27th September 1887.

From—The Government of India,

To—The Secretary of State for India.

The existing rules regarding the purchase of European stores required for the public service in India prescribe that, as a general rule, and with certain specified exceptions, such stores shall be obtained by indenting on the Store Department of the India Office, which is described as a special agency maintained for the express purpose of purchasing stores in England on account of the Government of India.

2. We are satisfied that the Government of India can, as a general rule, through this agency buy European stores at a smaller cost than through any other agency. This is especially the case in regard to Railway stores, the expenditure on which, both for the construction and renewal of railways, is very large, and is yearly increasing; and it, therefore, becomes a matter of considerable financial importance that we should be able, in as many instances as possible, to secure all those advantages, in the way of goodness and cheapness, which should naturally accrue to us from the existence of a home agency, with a good staff of Inspectors, for the purchase of such stores as we require.

3. We, however, find it to be the case (and the matter has been brought prominently to our notice by the Finance Committee), that the annual expenditure on European stores purchased in India amounts to a very large sum. The figures for the last three years for which returns have been received were 1882-83, 41 lakhs; 1883-84, 65 lakhs; 1884-85, 41 lakhs; and where such large figures are involved, the resultant loss, if regard be had only to outlay in purchase, must be considerable. It may be admitted at once that some portion of this loss would in any case have been unavoidable, and that any attempt to avoid it would only have resulted in greater indirect losses through delay to works or otherwise. The plea of urgency must in many cases be admitted as justifying the purchase of European stores in India even at an advanced price. In regard to Railway works especially, it is certain that no amount of foresight can prevent a large demand arising for articles of European manufacture, which, owing to the delay that would necessarily result, it would only be extravagant to order from England.

4. But, while admitting that it is impossible absolutely to prohibit the purchase of stores in India, we think that the present yearly amount of such purchases is very much larger than it need be, if the arrangements for procuring stores from England were fully efficient. Our examination into this matter leads us to the conclusion that the chief reasons for the excessive expenditure on such purchases spring from the inadaptability to the actual requirements of working officers of the rules of business adopted by the India Office Store Department. We have little doubt that purchases of European articles in India would be very largely reduced, and would not be made, except in cases of real urgency, and that the loss on account of such purchases would be reduced to a minimum, if the system of supply by the India Office Store Department were as unobjectionable in other respects as it is in the matter of the cost and quality of the articles supplied.

Several objections, however, do exist to the system as now worked; and as we are convinced that the removal of these objections is a necessary preliminary

to a stricter enforcement of the rules which may from time to time be laid down for regulating the purchase in India of articles of European manufacture, we are constrained to lay these objections before Your Lordship for such action as may be requisite.

5. The most important objection which has been brought against the Store Department system, and that on which practical unanimity of opinion appears to exist on the part of indenting officers, is its dilatoriness in the execution of indents. The delay which takes place in supplying stores, no matter how urgent the demand may be, necessarily leads to the multiplication of local purchases. If an officer in charge of works could obtain any article required within a reasonable period by a telegram to England, his chief motive for purchasing locally would be removed. Such an officer is certainly not less interested in keeping down his expenditure, and keeping within the estimates, than in getting the work finished promptly; and he would have no object in purchasing locally, when the local purchase would be more expensive than purchase through the home agency, unless the immediate extra expense would be more than saved in the end by the more rapid completion of the work. The knowledge of the delay that will occur in meeting his requirements through the regular channel must often influence an officer to purchase locally on the occurrence of an emergency. The reduction of the time occupied in the execution of indents to that which would ordinarily suffice for the execution of an order by the best Calcutta and Bombay firms would accordingly, without any action on the part of the Government of India, remove one principal inducement to a resort to the plea of urgency, and largely diminish the local purchase of articles which, as a general rule, it is considered desirable to purchase in Europe.

6. Of the validity of the objection referred to in the foregoing paragraph there appears to us to be ample proof. We have frequently had occasion to invite Your Lordship's attention to the serious inconvenience which has resulted from this cause in the case of important works. Quite recently we were compelled to complain of the very great delay which had occurred in complying with the indents for stores required for the Tirhoot and the Bellary-Kistna Railways. The Finance Committee have in their Note, a copy of which is appended to this despatch, given a list of cases in which the delay was very great, even where the indents were urgent; and further illustrations are afforded in the two letters from the Director General of Railways, and their accompaniments which we also append. These illustrations might be multiplied almost indefinitely, if occasion required.

7. We entirely agree in the view of the Finance Committee that the instances mentioned seem to show that at present avoidable delay occurs in each of the various stages through which the indent passes at the India Office, in obtaining the sanction of the Secretary of State in Council, in the issue of calls for tenders, in obtaining delivery, and in shipment of the stores.

8. The requirement of the Secretary of State's sanction to each indent before complying with it causes very material delay; and, in connection with this point, we invite Your Lordship's special attention to the remarks of our Director General of Railways. He shows that in almost every case a month's delay is thus occasioned, and that in some instances the delay is considerably in excess of that term. Under the existing procedure for providing for the payment of stores purchased by the Store Department for the Public Works, the responsibility for seeing that funds are available for the purchase lies with the officer who submits the indent to the Director General of Stores. It must be remembered that under the system by which all operations in the Public Works Department

are controlled, there is a very close financial check over executive officers at every stage of expenditure. Limits are placed on the money value of the stock of each Division; estimates for all original works and repairs, which are put in hand, require the sanction of different authorities; budget allotments are granted for all works or repairs before they are commenced. By means of this system any extravagant purchase—or the intention of making any extravagant purchase—of stores is far more effectually checked than it can be by any subsequent reference to higher authority, and we do not understand the necessity for obtaining the special sanction of the Secretary of State in Council to any indents from the Public Works Department either for Revenue (Railway) stores, or for stores for works the estimates for which have already received sufficient sanction. We would suggest that this delay might be avoided if it were made the rule that no reference to the Secretary of State should be required, and that in all ordinary cases the Director General should proceed at once to call for tenders, or to take such other action as might be requisite. In certain cases he might suggest modifications by letter or telegraph to the indenting officer, but delay would presumably occur only in cases in which there was good and sufficient reason for it.

9. As regards the practice of calling for tenders in almost every case, we would bring to Your Lordship's notice the specially long delay which has occurred in some cases in making the call, and in giving out the contracts after tenders have been called for. In one of the cases noticed by the Finance Committee, tenders had not been invited, even after nine months from the receipt of the indent; and in another case no contract had been let a year after the indent was received. We can conceive no reasons which would justify such delays as these, and we would strongly urge on Your Lordship the necessity for the issue of such orders as will ensure the prompt disposal of all indents as far as these stages are concerned. As a means to this end we would recommend to Your Lordship's notice the suggestion made by the Director of the North-Western Railway, and supported by the Director General of Railways, that the Indian plan of inviting periodical tenders from well-known firms for small stores and supplies in constant demand should be adopted in the India Office Store Department, so that orders received from India might be placed at once without the necessity of calling for a tender in each individual case. Substantially the same proposal is made by the Finance Committee in slightly different terms. It seems to us to be well worthy of adoption and we strongly recommend it to Your Lordship's consideration.

10. We would also suggest that measures be devised for ensuring the more prompt delivery of stores when the contract has been given out. This is a point which, in our opinion, should be strongly insisted on; and we endorse the suggestion of the Finance Committee that, where time would be saved by such a course, articles should be inspected and passed in the manufacturer's yard, and sent off by the manufacturer direct to the ship's side, without being taken to the India Office Store Depot.

In this connection, we bring to Your Lordship's notice a letter from the Director of the Indian Marine suggesting, with a view to prevent delay, that he should be authorised, when the annual contract for steel required for ship-building purposes has been given out by the Director General of Stores at the India Office, to demand from the contractor materials included in the contract in such quantities and according to such descriptions as may be from time to time needed, the contractor despatching and shipping the materials himself direct. We think that this suggestion may be adopted with advantage, if it can be

arranged that the goods shall, as at present, be inspected by the Store Department officers before shipment.

11. We think that the adoption of the suggestions detailed above would, to a great extent, obviate the delay which now occurs in the execution of indents, and we would strongly press them on Your Lordship's consideration. But whether these particular suggestions, or any modification of them, approve themselves to Your Lordship or not, we trust that it will be quite evident that the delay which does incontestably occur in the execution of indents, is a serious obstacle in the way of carrying out the policy—which, on general grounds, we believe to be the best and most economical for India—of obtaining, our European stores through the agency of the India Office Store Department and that it also occasions considerable extra expenditure. We trust that it will be found possible to devise some measures which will prevent the recurrence of such delays in the future.

12. Another objection which exists to the system now in force arises out of the attitude which the Store Department has been permitted to assume both towards the Government of India and the indenting officers.

We have already expressed our opinion as to the very decided advantages of an agency in England for the purchase of stores; but it appears to us that much of the advantage to be derived from such an agency is lost through the independent position which the Store Department occupies. That Department should, in our opinion, be in reality, what it is in name, an agency of the Government of India. The Head of the Store Department should understand that he is the Agent of our Government, and he should be responsible, not for the propriety of our proposals, but for the prompt execution of our orders.

The duties of the Store Department should be strictly confined to those of an agent for purchase, and it should not assume the position of a controlling department. Although the indenting officer presumably knows what is wanted better than an officer at a distance can do, the Store Department constantly assumes authority to substitute other articles for those which are indented for, entirely disregarding the competent opinions of officers on the spot, who are acquainted with all the facts and requirements; and this course often causes in the end a considerable increase of expense. We had recently occasion to report to Your Lordship the serious inconvenience which had resulted from the total alteration of the description of permanent-way for renewals on the North Western Railway, which had been settled by our highest authorities after most careful deliberation; and, again, from the substitution, on the Toun-goo-Mandalay Extension, of complete iron wagons for ironwork for wagons with wooden bodies, the bodies having been made up locally in the Railway workshops in anticipation of compliance with the indent. The uncertainty as to this essential point—of getting exactly what is wanted and is asked for—counter-balances to a very great extent the other advantages of the Store Department, and forms in the eyes of many indenting officers almost as serious an objection to the employment of its agency as the serious delays referred to above.

It is of great importance that officers in this country should be constantly supplied with information as to prices and as to new inventions, which have been successful in England, and which might be thought likely to supersede with advantage existing types. We consider that it would add to the efficiency and economy of our Public Works Department, if all officers in charge of executive divisions were able easily to obtain from England information concerning improvements and inventions, and details concerning rates, prices, &c.



We would propose that all such officers should be permitted to correspond direct with the Director General of Stores, and that it should be one of the duties of the Director General to reply fully to all enquiries thus made. But he should not, in our opinion, be authorised to question the demands made, or to alter the orders given, by substituting other articles for those ordered, though he might bring to the notice of an indenting officer, in the same way as any ordinary agent would do, any alternative method of meeting his requirements, which his own experience might suggest, provided that this could be done in such a manner as not to interfere with the supply by the date required.

13. Another objectionable feature of the existing rules is the requirement of annual indents based on average past consumption, which appears to us to be the cause of much waste and extravagance.

It is doubtless more convenient, and in some cases more economical, that the Store Department should have large annual, than small occasional, indents to deal with. In some few instances, where the demand is tolerably certain and there is little risk of changes of fashion, the convenience and economy secured are sufficient to justify the adoption of the system of annual indents; but as regards many kinds of stores, especially Public Works stores, the system is certainly most costly.

In the management of a large business, it is quite impossible to foresee a long time beforehand all requirements. The objection entertained by the Store Department to small indents practically bars them, except in cases of extreme urgency; and thus local purchases at a higher cost are necessitated in many cases in which, though there would be time to get the articles required from England, if they could be ordered at once and supplied with promptitude, it is impossible to wait for their supply till the next annual indent. Extra expense is thus occasioned, which in the aggregate of these small transactions amounts to a considerable sum.

But the most inconvenient result of this rule is the unnecessary accumulation of stores which it causes. The rules in force in this country for the check by the Director General of Railways of indents for Railway stores (the most important item in the imports of Government stores) are framed with the view of preventing, as far as possible, the accumulation of surplus stores, which eventually, owing to their becoming obsolete or from other causes, have to be sold for a mere fraction of what they cost. And in the case of stores required for the Military Department the indents are, as a rule, checked by heads of Departments with the same object in view. But such accumulations cannot be prevented under a system of annual indents. An instance has recently been brought to our notice in which the manager of a Railway withdrew an indent for his yearly requirements and substituted one of double the amount, on the ground that he must provide, not only for probable, but for all possible, requirements. This is certainly an extreme case, but it serves to indicate the tendency which must exist under such a system. Officers in charge of important works or lines must either accumulate larger stocks than are likely to be required, or must run the risk of having their work hampered for want of some article, the supply of which has from sudden and unexpected causes run out.

The loss involved in such accumulations materially diminishes the economy of purchase through the home agency, though it might to a large extent be avoided by the alteration of the rules enjoining annual indents.

14. If the Store Department were rendered thoroughly efficient in the points which we have noticed; if orders were executed promptly; if the Department occupied the position of an agent, so that officers might be reasonably certain of

obtaining the articles for which they indent; and if annual indents were abolished—we should feel ourselves in a position to deal effectively with the question of local purchases of European stores, by prohibiting them, save in cases of urgency, the necessity in each case being determined by such officer as may under the rules be competent to deal with it, and by strictly enforcing the rules so laid down.

15. The existing rules admit of local purchases of European stores being made only with the previous sanction of the Government of India or the Local Government (including the Director General of Railways in respect of Railways under his direct control), which have unlimited powers of sanction, in certain special cases of obvious expediency, which are defined in the orders on the subject in the following terms:—

*1st*—When for any special reason it may be more economical to do so.

*2nd*—When stores indented for from England have not arrived, and inconvenience to the public service is anticipated from delay in supply.

*3rd*—When the articles are perishable.

We have stated already that the plea of urgency must be admitted in some cases; and we think that the condition in the second of these special cases, which restricts the admission of the plea of urgency to cases in which stores have been already indented for from England, but have not arrived, should be cancelled. The Government of India and Local Governments should, in our opinion, be empowered to sanction the local purchase of European stores in any case in which inconvenience to the public service is anticipated from delay in supply whether the stores have been indented for or not. A sudden emergency may give rise to a demand, for which no amount of foresight could have provided, and with which it may be impossible without great loss to avoid immediate compliance; and even in cases where the necessity may arise from the fault or omission of the officer concerned, it is not right that the public service should suffer during the time necessary to remedy it.

We also consider that it will be necessary to go beyond this in recognising the plea of urgency, and to extend the rules so as to admit of controlling officers sanctioning local purchases subject to certain limitations. The limits suggested by the Finance Committee do not approve themselves to us; but we think that some such limits as the following should be prescribed.

A Superintending Engineer of a Circle, or a Manager or Engineer-in-Chief of a Railway, might be permitted to sanction local purchases up to a cost of Rs.1,000 for any single item, subject to a maximum limit of Rs.20,000 a year in the case of a Superintending Engineer, and of 5 per cent. on the average amount of stores purchased yearly in the case of a Manager or Engineer-in-Chief of a Railway. A report of the action taken should be made in each case to the Government having the control of the work or railway, together with an explanation of the urgency and of the reason why the demand was not foreseen, and why an emergent indent on the Home Store Department would not have met the case, and with an estimate of the probable loss or gain.

In issuing these rules, we should take the opportunity of impressing on all officers that, with the new facilities for obtaining stores promptly from England (if our recommendations are accepted), the necessity for all such purchases would be carefully scrutinised, and that we should view with serious displeasure all local purchases which we consider to have been made unnecessarily.

Under these precautions, we think that no evil consequences would result from the extension of the rules now advocated, and that the anticipation ex-

pressed above in our 4th and 5th paragraphs as to local purchases being largely diminished, and confined to cases of real urgency, would be fulfilled.

16. We propose at once to issue orders, calling attention to the matter noticed in paragraph 26 of the Finance Committee's Note, and prohibiting strictly the irregular practice of purchasing stores, which are not required for immediate use, merely with the view of preventing a lapse of grant.

17. We do not endorse the proposal of the Finance Committee for the appointment of a Director of Stores in this country, who would exercise a general control over all stores transactions, and would be the general agent for the purchase in this country of stores required for the various Departments. As far as the Public Works Department is concerned, there is a distinct advantage in having only one purchasing authority at the Presidency towns and at Karachi; but the Port Store-keepers are already largely recognised as the channel for such purchases at these places, at any rate as far as railways are concerned. We consider that their position in this respect should be more clearly defined, and we propose to issue orders under which they will be more fully utilised by all Public Works officers as agents at their respective stations for the purchase of all articles, whether of local or European manufacture.

[Enclosures not printed.]

No. 191 (Financial), dated 26th July 1888.

From—The Secretary of State for India,  
To—The Government of India.

I have considered in Council Your Excellency's letter, dated the 27th of September 1887, No. 256, in which, with reference to the remarks of the Finance Committee upon the costliness of the practice of buying in India stores of European manufacture, you express your opinion that it would be possible to make the regulations on the subject more definite, and to act on them more strictly, if less delay occurred in compliance with indents transmitted to this country; and you forward a very long list of cases in which it is alleged that the Store Department in this office is responsible for the long time that elapsed before the articles were received.

2. I do not propose to discuss these cases in detail, especially as explanations have been given in the Despatches noted in the margin, to which no reference is made in Your Excellency's letter. Cases of unavoidable delay have no doubt occasionally occurred and may probably occur in the future, in spite of the best efforts of those on whom the responsibility for this business chiefly falls. I have, however, satisfied myself that a considerable improvement in the working of the Store Department has lately been effected, and no pains will be spared to bring about further improvement as opportunities may occur.

3. Your Excellency speaks of the Director General of Stores being the agent of your Government, and responsible not for the propriety of your proposals but for the prompt execution of your orders. It would, however, be much more correct to describe the Government of India as being in these matters the agent of the Secretary of State. Under the Act for the better Government of India, the expenditure of the revenues of India, both in India and elsewhere, is subject to the control of the Secretary of State in Council, and is incurred upon his respon-

14th June 1883, No. 84.  
30th September 1885,  
No. 17.  
15th February 1886, No. 4.  
22nd April 1886, No. 8.  
20th May 1886, Nos. 10  
and 11.  
See also subsequent Despatch of 3rd November 1887, No. 37.

sibility; and it is only by his delegating to your Government a portion of the power thus entrusted to him, which he does with complete confidence that it will be well exercised, that it is possible for your Government to purchase stores with that freedom from minute check which is essential for the prompt despatch of business in India. It would, however, be entirely contrary to the spirit of that Act if the Secretary of State were to divest himself of the control over the officer in this country whom he has appointed to manage the purchase and despatch of stores for India, and for all whose acts he alone is directly responsible to Parliament.

4. It is further necessary for me to point out that for any interference with the literal execution of the indents, it is the Secretary of State in Council, and not the Director General of Stores, who is responsible. Experience shows that indenting officers do not necessarily and invariably know how the requirements of any given case ought to be met better than the officers of the Store Department in this country, acting with the advice of the professional authorities consulted by that Department, since the indenting officers must sometimes be unacquainted with the changes in price or in pattern which are continually occurring, or with improved designs for the stores to be supplied which may be available; and it is certain that were the demands received from India to be complied with by mere agency, without any attempt at examination or control, much waste and needless expense would occur.

5. With reference to the suggestion that time would be saved by the inspection of articles in the manufacturer's yard, and their direct shipment thence, I have to observe that this course is invariably followed with such railway supplies as a permanent-way, bridge-work, rolling stock, machinery, &c., delivery at the Store Depôt being confined to comparatively small miscellaneous articles which it would be neither practicable nor advantageous to inspect elsewhere.

6. With regard to the further suggestion as to the adoption of a system of running contracts for articles in constant demand, I have to observe that under such a system, even for small supplies, it has been found that contractors are not, as a rule, prepared to bind themselves in advance to supply at favourable rates indefinite quantities of stores, the cost of which to them may at any time be enhanced by a rise in the prices of materials or labour. A contract of this nature must necessarily be a speculative one, and prices would be quoted, to cover the contractor's risk, in excess of those which can be secured if a definite tender be invited for specific quantities, to be paid for at a price which the contractor can safely calculate when he makes his offer.

7. In my Despatch of the 24th of April 1884, No. 24 (Public Works), I sanctioned various arrangements for the acceleration of business in regard to indents for that Department; and I see no objection to a similar extension of the system of direct communication with the Director General of Stores by the heads of other Departments, if you think it advisable.

8. It appears to me, however, that the supply of all minor articles might be accelerated and their wasteful accumulation obviated, by the constitution of depôts for such stores at each of the five great ports in India. In this view I am of opinion that the suggestion made in the last paragraph of your letter under reply, to the effect that the Port Storekeepers' position may with advantage be made more clear, and their services more fully utilized, is one to which further attention should be given. I accordingly request that the subject of the supply of stores from England may be reconsidered from this point of view with the intention of amalgamating as far as possible the requisitions for miscellaneous stores, and arranging, by means of a general indent, for their simul-

taneous purchase in this country, and subsequent despatch to the several ports from which they would be most conveniently distributed.

9. I observe that you doubt the expediency of the suggested appointment in India of a Director of Stores to supervise the entire business of supply. But I am disposed to think that a valuable check on all these transactions, especially in relation to the economical purchase of the stores, locally, might be secured under the control of some such superior officer, and I therefore desire to commend this arrangement to your further consideration.

10. Moreover, the action of a Director of Stores would also apparently be desirable to provide for the compilation from the various requisitions for miscellaneous stores of all descriptions of such a general indent as is above referred to, showing the ports to which the several portions of the supply should be despatched. Then by forming dépôts at those ports of the stores that are in most frequent demand, officers requiring such articles, whose wants had not been foreseen, might, by applying to the Storekeeper, be at once supplied in many cases from one or other of the dépôts. Under some such arrangement, subject to the control of the Director of Stores, it seems probable that not only would the inconvenience arising from the necessity of awaiting the result of a reference to England, or the expense involved in local purchase, be avoided, but there would be much less likelihood of a needless accumulation of stores in various parts of the country than with the present system, under which each Railway or Department has its own reserve dépôt.

11. A further advantage to be derived from action in this direction would probably be the diminution of the number of urgent indents on England. In the two years from October 1885 to October 1887, there were 147 indents from State Railways, of which all but 14 were marked as urgent, and 98 as of a specially urgent character; and the same remark applies to no less than 38 out of 44 indents received in the last six months. When nearly all indents are described as urgent, it is difficult to say to which preference should be shown, and such pressure results in undue haste, and in consequently enhanced expense.

12. I notice that you speak of much waste and extravagance as resulting from the system of preferring annual indents based on average past consumption. This arrangement, however, is mainly within Your Excellency's control. The form of indent seems to have been adopted in the Military Department\*

\* Despatch to India, 24th October 1860, No. 393 (Military).

with the view of ensuring a regular supply of the stores required by a large Department, and of avoiding applications of a special kind which might lead to trouble and expense. It would probably be useful to maintain it for such articles as can be kept in stock at the dépôts which I have above proposed, and it is certain that one regular annual indent can be contracted for on cheaper terms than a number of minor indents received at irregular intervals. On this point I may mention that during the last year it has been necessary for State Railways only to enter into upwards of 150 contracts under £10, nearly one-third of which were for stores valued at less than £2. As an illustration of this, I subjoin the following abstract of the operations needed in supplying the stores required under an indent lately received from the Wardah Coal Railway (No. 2 of 1887):—

Number of items . . . . .	165
Total value . . . . .	£2,084
Number of contracts necessary . . . . .	52
Number of contracts under £2 . . . . .	13
Number of contracts, value £2 to £10 . . . . .	10

There is not, however, or ought not to be, any obligation on the identifying officer to prefer demands based on average past consumption, unless there is a distinct probability of a further supply of such articles being required; nor, in such an event, is there any obligation on him to demand the full established proportion, reference to which is chiefly useful to show *prima facie* that the demand is not excessive. Your officers are at any time at liberty for well-established articles of supply to reduce the stocks required to be maintained to such an extent as may appear to be prudent; and I request that instructions may be at once given to prevent any misapprehension as to the intentions of the Secretary of State in Council in this respect.

13. Since your letter was written, Your Excellency will have received my Despatch of the 3rd of November 1887, No. 37 (Stores), in which I explained in some detail the course followed in regard to certain indents, and the general system of dealing with indents and contracts for the supply of stores, on which there has been considerable misconception. I trust that its perusal will have satisfied you that, whatever may have been the case in former years, there is no longer any ground for the remark of the Finance Committee, in which Your Excellency has expressed entire agreement, that avoidable delay occurs in each of the various stages through which an indent passes in this office; and that by adopting some such measures as those to which reference has been made in this Despatch, you will be able to place on a more satisfactory footing the local purchase of stores other than those produced or made in India, to the great and needless expense of which the Finance Committee has drawn your attention.

14. To effect this result, the rules laid down in paragraphs 2 and 3 of your Resolution, dated 10th January 1883, ought to be adequate if they be properly understood and applied. They are to the effect that all articles required for the public service which, in the opinion of the authorities in India, cannot without disadvantage in respect of cheapness or quality, or both, be manufactured in India, are as an almost invariable rule to be obtained by indenting on the Secretary of State; but that in special cases stores of European manufacture may be obtained in India—

1st.—When for any special reason it may be more economical to do so;

2nd.—When stores indented for from England have not arrived, and inconvenience to the public service is anticipated from the delay;

3rd.—When the articles are perishable.

15. It would be an abuse of these rules if want of care or forethought in preparing indents for stores which ought to be supplied from this country make it necessary to have recourse to purchase in India. True economy demands that purchases in India should be limited to articles which can be produced or manufactured in that country of a quality and price which compare not unfavourably with those of similar articles of European manufacture; and a supervising officer, such as the suggested Director of Stores, might be expected to apply the needful check to ensure that departures from the spirit of this rule shall not pass unnoticed.

16. Subject to these remarks, and within the limits just stated, the purchase in India of such articles, when found suitable, is likely to be beneficial, not only in effecting direct economy, but in avoiding delay and simplifying the procedure under which the stores required in India can be obtained.



## **SECTION VI.**

**Docks and Harbours.**

**Buildings.**

**Irrigation.**





## DOCKS AND HARBOURS.

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 Madras Harbour.
 

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No. 25, dated 16th May 1887.

From—The Government of India,

To—The Secretary of State for India.

In Public Works Despatch No. 1, dated the 3rd February 1887, addressed to His Excellency the Governor of Madras, Your Lordship referred to the action taken by the Harbour Board with reference to the authorized design of the Madras Harbour. We have received from the Secretary to the Government of Madras the papers marginally noted, of which copies have already, we understand, been forwarded to Your Lordship by His Excellency the Governor. These papers afford an explanation concerning the action taken by the Harbour Board which will no doubt be accepted as satisfactory, for it is clear that the Board had no intention of carrying into execution any alteration in the Harbour without the sanction of competent authority, while they were not in any way exceeding their authority in asking the Superintending Engineer of the works to prepare a design for any proposals which they might wish to make.

Proceedings of the Government of Madras, Nos. 784 W. and 786 W. of the 14th March 1887.

2. In Lord Kimberley's Despatch No. 56 P. W. of 25th September 1884, reference was made to the views of Sir John Hawkshaw's Committee and to those of Mr. Parkes, on the subject of the proposed change in the position of the entrance to the Harbour, and it was said that "Mr. Thorowgood, who is in full possession of Mr. Parkes' views, and of the reasons which have led him and the Committee to adhere to the Eastern Entrance, has already started on his return to Madras, and will be able to furnish the authorities there with any additional particulars they may require, and it is to be hoped that conflicting views may be reconciled by further discussion."

3. At the time when this Despatch was received we thought it better to take no immediate action concerning the question of the entrance, partly for the reason that it was evidently our duty to allow scope for the further discussion which Lord Kimberley thought would have beneficial results, and partly because there was no apparent advantage to be gained by attempting to arrive at an early decision on the matter. The opinions expressed by Mr. Parkes in the documents noted in the margin, showed that, if it should prove desirable to alter the entrance, the alteration could be both more cheaply and more expeditiously made when the works had been completed in accordance with the authorized design.

4. The difference of opinion to which Lord Kimberley referred may be said to have been the difference between the opinion of Sir John Hawkshaw's Committee, in which Mr. Parkes concurred, and the opinion of all persons or bodies

Letter dated 9th March 1882, from Mr. Parkes, to the Secretary to Government of Madras, Public Works Department, paragraphs 44 and 45.

Letter dated 10th February 1883, from Mr. Parkes, to the Under-Secretary of State for India, paragraph 14.

in India who were interested in the Harbour, or who had been officially or professionally consulted concerning it.

Among those who maintained an opinion favourable to an alteration in the site of the entrance were—

The Madras Committee of local professional gentlemen, which reported on the 30th June and 22nd September 1883.

The Madras Chamber of Commerce.

\* Mr. G. L. Molesworth.  
Colonel H. A. Brownlow, R.E.  
„ W. S. Trevor, R.E.

The professional advisers of the Government of India.\*

All Commanders of first class steamers using the Port of Madras who had been consulted

The local Nautical authorities.

The Madras Government.

We are not in a position to know whether the opinion of the gentlemen who were members of Sir John Hawkshaw's Committee may have been in any way modified, but it is a fact that the experience of the last three years and the further discussions which have taken place have in no way altered the opinion of all competent authorities in this country. That opinion is steadfastly opposed to the retention of the eastern entrance, and generally, although not quite unanimously, in favour of a north-east entrance to the Harbour.

5. The Government of India has hitherto refrained from the assertion of any very decided opinion on this question of the entrance. We think that the time has now come when our opinion may be advantageously expressed. The balance of evidence is strongly adverse to the eastern entrance, and it may well be deemed hardly politic or safe to compel the Madras Harbour Board to construct a harbour in a manner which is opposed by nearly all, if not by all, persons in India who are competent to judge of the matter, or who have interests at stake in the work. But we would add that the opposition of the Madras Government and of all Madras local authorities to the eastern entrance has our entire concurrence, and that we are convinced that no harbour at Madras, which is made with an eastern entrance, can be at all effective. We append a brief summary, by our Consulting Engineer Mr. Molesworth, of the opinions he has previously recorded on the subject.

6. We understand, from the reports of Mr. Parkes and of Sir John Hawkshaw's Committee, that there is no engineering difficulty in constructing a north-east entrance. The Committee, indeed, appear to admit that the question of the proper site for the entrance is more a nautical than an engineering one. The absolute unanimity of all commanders of steamers using the port, against the eastern entrance, must, we think, have great weight in this respect.

7. We would ask Your Lordship to take this question of the position of the entrance again into consideration; for we are convinced that the matter cannot be set at rest until either our views and those of the other authorities in this country are accepted, or the views held by Sir J. Hawkshaw's Committee and Mr. Parkes have received the support of the highest Nautical authorities. It would seem to be essential, in the latter case, that the opinion of those authorities should be given after they have fully satisfied themselves, by local investigation, concerning all the circumstances, and have shewn good cause for setting aside the opinion of all the commanders of local experience who have been acquainted for many years past with the various conditions of the problem.

*Memorandum by MR. G. L. MOLESWORTH, C.I.E.,—dated 9th May 1887.*

No new engineering feature has been imported into the case since I wrote my notes of July 17th, 1883, and April 19th, 1884.

With regard to the engineering points at issue, I may sum up my opinions as follows :—

*1st*—It is impossible with an eastern entrance to exclude from the harbour waves of considerable magnitude, even should the entrance be narrowed to 450 feet.

*2nd*—The adoption of a north-east or south-east entrance is the only mode of excluding such waves from the harbour.

*3rd*—The north-east entrance appears to be preferable to the south-east entrance, because the north is less exposed than the south to encroachments from sand.

*4th*—The re-entering curve proposed by the Madras Committee in the overlapping arm to the north-east elbow is open to serious objections; but I notice that Mr. Thorowgood, in his letter, dated January 31st, 1887, has submitted a sketch in which this is modified to meet the objection to a re-entering curve raised in my note of July 17th, 1883.

*5th*—A prolongation of the present face of the harbour so as to avoid the necessity for this re-entering curve would throw the entrance 200 or 300 feet nearer to shoal water.

*6th*—The alternative plan for forming a north-east entrance by the prolongation of the south-east face so as to overlap the present eastern entrance as suggested in my note of July 17th, 1883, would afford shelter to the harbour and would at the same time allow more sea room for vessels entering the harbour, but it would involve greater expense.

The feasibility of entering or leaving the harbour by the north-east is a question for nautical men to decide, and whether an entrance at the north-east elbow would allow sufficient sea room is also a nautical point on which I do not feel qualified to offer an opinion.

No. 6, dated 19th May 1887.

From—The Secretary of State for India,

To—The Government of Madras.

With reference to the telegrams noted in the margin, I have to inform Your

Excellency that, taking into consideration the conflicting opinions which have been expressed as to the position of the entrance to the Madras Harbour, and the importance of the interests involved in the settlement of the question, I have determined to obtain advice in the

Telegram to Governor, Madras, dated 29th March 1887 :—

“Question of harbour entrance will be at once re-considered and referred to a Committee here. Work should be prosecuted with due regard to possible change of plan. Keep me informed of arrangements proposed in this view.”

matter from eminent naval and engineering authorities.

2. A Committee has accordingly been formed, consisting of Admiral Nowell

Telegram from Governor, Madras, dated 26th April 1887.—

"The Port Trust has resolved unanimously that the Trust should be adequately represented on the London Committee appointed to consider the harbour entrance. The Board has suggested Captain Taylor should be appointed. He could go by next mail if you consent to this."

Telegram to Governor, Madras, dated 27th April 1887.—

"Yours, 26th. Committee already formed and at work (Admirals Salmon, Nares, and Coode), but I shall be very glad that Taylor should come to represent views of Port Trust, if you think desirable."

Salmon, C.B., V.C., Admiral Sir George Nares, K.C.B., and Sir John Coode, K.C.M.G., who have been requested to examine the question thoroughly, obtaining such nautical and other evidence as they may think necessary.

3. You were authorized by my telegram of 27th April to allow Captain Taylor to come to this country, should you think it desirable, in order that he might represent the views entertained by the Port Trust on the subject.

4. The decision which may ultimately be come to will be communicated to you when the Committee have submitted their report. In the meantime, the prosecution of the harbour works need not seriously be interfered with, due care being taken to avoid any action that would prejudice the question of the entrance.

### Calcutta Docks.

No. 1512, dated 23rd March 1885.

From—J. F. FINLAY, Esq., Offg. Under-Secy. to the Govt. of India,  
Department of Finance and Commerce,

To—The Secretary to the Government of Bengal, Financial Department.

I am directed to acknowledge the receipt of your letter No. 1078, dated the 7th March 1885, and enclosures, relative to the request of the Calcutta Port Commissioners that, in addition to the advance of 15 lakhs of rupees granted to them in connection with the commencement of the docks at Kidderpore, a further advance of 15 lakhs of rupees may be granted to enable them to meet expenditure on account of the docks until they are in a position to raise funds by loans under the new Act.

2. In reply, I am directed to inform you that the Governor General in Council regrets that he is unable to grant any further advance for the construction of the docks. I am at the same time to state that it would be well if the Port Commissioners should consider whether their chances of floating a loan here are sufficient to justify continuation of the works at present, it being impossible to furnish them with other funds than those which they may be able to raise in the open market.

3. I am further to state that His Excellency in Council has noticed with regret that the Port Commissioners have borrowed money for the construction of the docks on the security of the Hooghly Bridge Reserve Fund, and fully approves of the remarks which His Honour the Lieutenant-Governor proposes to make on this point. Under the law the securities forming the Hooghly Bridge Reserve Fund are held in trust exclusively for the purposes of the Bridge Act, and in order that they may be at once released, I am to say that the Government of India is prepared to advance to the Commissioners whatever sum may be necessary for this purpose. As soon as the Port Commissioners intimate that the necessary arrangements have been made to release the securities, and state the amount which will be required, the necessary orders for an advance will be given to the Accountant General.

No. 38 (Financial), dated 19th February 1885.

From—The Secretary of State for India,

To—The Government of India.

At the close of my Despatch, dated the 27th of November, No. 73 (Public Works), I expressed my intention of writing further to your Government on the question of the manner in which the money needed for the extension of the Calcutta Docks, and certain other large works which are to be constructed by local bodies in India, should be raised.

2. According to the 16th paragraph of the letter from your Government of the 29th of August, No. 44 (Public Works), it is expected that at least 300 lakhs will be required for the Calcutta Docks, 30 lakhs by the Calcutta Port Trust for other purposes, 350,000*l.* by the Calcutta Municipality, nearly 50 lakhs for the Madras Harbour, 96 lakhs for the extension of dock accommodation in Bombay, and a large sum also for the water-supply of the Bombay Municipality, the total being upwards of 5 crores of rupees required to meet the wants of local bodies during the next five years.

3. You are of opinion that the Indian market cannot supply, at a reasonable rate, the whole of the money which in that period will be required both by the Government and by these local bodies; but that, if the Government only raises occasional loans of moderate amount in India, and obtains any further sums it may require in England, the local market may probably be able to supply the wants of the local bodies. As, however, those bodies appear generally to be of opinion that it would be to their advantage to borrow in London, and in gold, and they are willing to do so, you do not think it is sound policy to oppose their wishes in this respect. The lower rate of interest payable on gold loans is, you consider, sufficient to cover any probable future fall in the price of silver, while the borrowing by local bodies in England would, you observe, leave the Indian market free for your own operations.

4. Two other letters have been recently received from your Government on the subject of the funds required for local purposes. In the one, dated the 13th of October, No. 310 (Financial), you gave your reasons for thinking that the assistance which had been exceptionally promised to the Trustees of the Calcutta Port for the construction of their docks, should not be extended to the loan of 94 lakhs of rupees which the Bombay Port Trust desire to raise for the extension of docks at Bombay, but you recommended that they should be permitted to raise the money by a gold loan in London, if they thought fit. In the letter of the 20th of October, No. 318, you reported the failure of the Calcutta Municipality to raise a loan of 15 lakhs, on debentures at 5 per cent., for the introduction of further improvements in the town of Calcutta and its suburbs.

5. The principal considerations raised in these letters may be summarized as follows:—

- (1) Are there valid reasons for refusing to the Port Trusts and other local bodies in India the advantage enjoyed by similar bodies in British Colonies, of borrowing in sterling in the London market?
- (2) If there are such reasons, should the Government itself borrow the money needed, and advance it to the local bodies at a somewhat enhanced rate of interest?
- (3) If not, is there sufficient reason for treating any of these bodies in an exceptional manner, and for granting a guarantee of the loan which it desires to raise?

6. As regards the first question, it appears to me that the circumstances of India are so entirely different from those of the Chief British Colonies (other than Crown Colonies) in Australia, North America, or Africa, as to render the arguments which apply to the latter inapplicable to the former bodies. The latter are in most respects self-governed countries, with popular legislatures, and are wholly responsible for their own financial arrangements. The interests to be promoted are those of the colony, and the standard in which contracts for loans are made is that in which the revenue of the colony is raised. In India the case is entirely different. The responsibilities of the administration are not shared by any popular legislature, and all the financial operations are directly controlled by the Secretary of State in Council. And if a loan were raised in London, both the principal and interest would have to be discharged in gold, while the receipts for supplying the necessary funds could only be procured in silver, so that the amount of the liabilities would be continually fluctuating with the variations in the price of silver.

7. Holding, then, the opinion that it is not expedient that local bodies should borrow in England for local works, I proceed to consider whether it is desirable that the Government should take advantage of its superior credit to raise the money, and then lend it to those bodies at a rate of interest somewhat in excess of that which it is called upon to pay.

8. On this point I may remind Your Excellency that this was the practice for many years; but that, as the loans of the Government for its own works increased, it was found that the additional burden of borrowing for local pur-

\* India Financial Proceedings, November 1878, Accounts and Finance, page 747.

poses could not conveniently be sustained; and in 1878\* it was determined that, whether in the case of the municipality for a single city, or in that of the Trust of a port which was an emporium for the commerce of a province, the local body should be required to provide for its own needs, by raising funds in India. The reasons which led to that decision are of even greater force at present, when it has become necessary strictly to limit the rate of expenditure at which the public works that your Government deem essential shall be constructed from borrowed money, and when, for the first time, a difficulty has arisen in placing on the Indian market the loans authorized for Productive Public Works. If the Government is to be exposed to the disadvantage of raising loans in sterling, owing to the absence of any demand from capitalists in this country for rupee securities, it is obviously desirable to restrain within as narrow limits as possible the amount of borrowing in London, and not to encourage the competition of local bodies in a market upon which we are likely to make heavy demands for the direct requirements of your Government; while the higher price given in India for loans raised in rupees should be paid by the particular bodies for whose benefits those loans are raised, and not by the whole people.

9. There remains the consideration whether any exceptions should be made to this general rule. In my Despatch of the 6th of March 1884, No. 13 (Public Works), I stated that, in view of the general and Imperial interests involved in the construction of the Calcutta Docks, it might perhaps be proper to give to the Port Trust some financial assistance, as had been done at Bombay when the foreshore properties were acquired; and I indicated, in the tenth and eleventh paragraphs of that Despatch, the manner in which it appeared best to give the assistance desired. I continue to hold the views therein expressed.

10. As regards the extension of the docks at Bombay, I learn, from your letter of the 10th of November 1884, No. 59 (Public Works), that you have authorized the commencement of the works, and the raising of a debenture loan

in rupees; and I doubt not that this is the proper manner of carrying out such an undertaking.

11. With reference to the case of the Calcutta Municipality, mentioned in your letter of the 20th of October, I am glad to learn, from your further letter of the 23rd of December, No. 368, that the balance of the loan which they had invited was, on the 24th of October, subscribed at par.

No. 1828, dated 7th July 1885.

From—D. BARBOUR, Esq., Secretary to the Govt. of India,

Dept. of Finance and Commerce,

To—The Secretary to the Government of Bengal, Financial Department.

In continuation of the telegram from this Department, dated the 6th June 1885, quoted in the margin, I am directed

No. 1302, dated 6th June 1885.

Telegram from—Finance Secretary, Simla,

To—Financial Secretary, Bengal.

Your 651. We addressed on 28th May the following telegram to Secretary of State:—*Message begins*—"The Calcutta Port Commissioners are in urgent want of 30 lakhs to meet the cost of works other than works connected with the Kidderpore Docks. A large portion of the money required has in fact already been spent.

We have sanctioned the raising of a loan of 30 lakhs by the Port Commissioners, but they are unable to raise money economically by an unguaranteed loan, so long as the probability of an early guaranteed loan for the Docks hangs over the market.

In the peculiar circumstances of the case, we strongly recommend that Government guarantee interest on the loan of 30 lakhs now required. There is no likelihood of Government having to make any payment under the guarantee, and the Port Commissioners will be enabled to repay money now due to Government. Please telegraph reply early."—*Message ends*.

Secretary of State replied on 2nd June as follows:—*Message begins*—"I have received your telegram of 28th May 1885—Calcutta Port Trust. I cannot agree to your recommendation regarding works other than Kidderpore Docks."—*Message ends*.

There will be no Government loan in India this year.

Orders on the whole question will follow shortly.

to convey the following observations on the questions raised by the Calcutta Port Commissioners in their letter No. 76, dated the 10th April 1885, referred to the Government of India with yours of the 8th May, No. 651 T.—F.

2. The questions raised are—(1) how the funds necessary to meet expenditure on the Docks are to be provided; and (2) how the Commissioners are to meet expenditure for general purposes connected with the Port?

3. As regards the first question, I am to say that the Bill to enable the Commissioners to construct docks has received the assent of His Excellency the Viceroy and Governor General. A communication on this subject has been made to the Government of Bengal from the Legislative Department.

4. As to the second question, I am directed to refer you to the telegram of the 6th ultimo, from which it will be seen that the Secretary of State has refused to accept the recommendation of

the Government of India to guarantee the interest on the loan of 30 lakhs of rupees required by the Commissioners to meet the cost of works other than works connected with the Docks.

As arguments have been used both by the Commissioners and the Government of Bengal which seem to imply that some special responsibility rests with the Government of India in connection with the expenditure on these general works, I am to say that the Governor General in Council cannot accept any such contention.

The circumstances are these: the Commissioners applied in February 1884 for permission to raise in London a loan of 30 lakhs for general purposes. The Secretary of State did not approve of local bodies raising loans in England; and in 1884 the Commissioners were informed that they must borrow in India.

In the meantime it had been decided to guarantee a loan of 20 lakhs for the construction of the Docks, and it was represented to the Government of India



that it would be, on financial grounds, inexpedient for the Port Commissioners to issue simultaneously proposals for a guaranteed loan of 20 lakhs and for an unguaranteed loan of 30 lakhs. Some correspondence followed, and finally the Government of Bengal submitted the proposals contained in the telegram of 2nd August 1884, and the letter of 4th August 1884, No. 1501. In paragraph 4 of the letter of 4th August, it was said: "A solution of the present difficulty might be found if the Government of India could advance the Commissioners a sum of 15 lakhs;" and further on in the same paragraph: "if the simpler and more satisfactory expedient of an advance from Imperial Funds pending the settlement of the general question of the sterling loan cannot be adopted, the obvious course is for Government, in supersession of the Notification of 19th ultimo, to announce that it will guarantee a loan of 30 lakhs to be raised under the existing law, for general improvement. These proposals were understood to mean that either an advance of 15 lakhs should be made from Imperial funds to enable the Commissioners to carry on the Dock works, or that Government should guarantee a loan of 30 lakhs for general purposes, from the proceeds of which money could be advanced for the Docks. The Government of India decided to accept the first of these alternative proposals and to advance

Telegram No. 2853, dated 15th August 1884.

Your letter No. 1501, dated 4th—Calcutta Port Trust. Government of India will advance 15 lakhs to Port Commissioners, but is anxious that only so much of the advance be withdrawn from the public treasury before 1st December next as is needful. Notification regarding guaranteed loan not to exceed 50 lakhs will be cancelled. Arrangements should be made to proceed with the necessary legislation without any avoidable delay so as to obviate future difficulties.

15 lakhs, and the Government of Bengal was informed that the proposed advance would be made in the telegram of 15th August, No. 2853, quoted in the margin. This decision obviously negated the alternative plan of raising a guaranteed loan of 30 lakhs; and it rested with the Port Commissioners on receipt of the telegram of the 15th

August, to take steps for obtaining the money they required by calling for tenders for an unguaranteed loan. Hence His Excellency in Council is at a loss to understand why it is stated in paragraph 23 of the Port Commissioners' letter that "the Commissioners had every reason to expect that the loan of 30 lakhs required for their ordinary works would be guaranteed by Government;" or why in the concluding portion of paragraph 6 of your letter it is stated that "no reply has yet been given to the questions connected with the loan of Rs30,00,000 for general improvements."

5. In connection with the question of the provisions of funds for general port purposes a further question has been raised regarding the release of the securities and balances held by the Port Commissioners on various accounts, and which have been appropriated by them towards expenditure on general works. In the letter in this Department, No. 1512, dated the 23rd March 1885, the Government of India promised to advance money to release the securities and balance connected with the Hooghly Bridge. The Government of Bengal urges that it is equally desirable to release the other securities and balances appropriated towards the expenditure on general works. This, however, the Government

	Lakhs.
* On 31st March 1885 . . .	1½
On 10th May " . . .	4
On 27th " " . . .	3½
	—
	8½
	—

of India is unable to admit; and, as since the date of the promise sums aggregating 8½ lakhs of rupees have been advanced to the Port Commissioners, the Government of India regrets that it is at the present time unable to advance the

money required to release even the Hooghly Bridge securities and balance. As it is the Government of India that possesses a lien on the Hooghly Bridge

securities and balances, I am to say that it will not formally object to the use which the Port Commissioners have made of them, but the Commissioners should arrange for their release on the earliest possible date.

6. In conclusion, I am to state, with reference to your letter No. 1235, dated the 3rd April 1885, that the Port Commissioners should take an early opportunity of raising the money required by them for general works so as to enable them to repay to Government the advances which have been made, at some public inconvenience, for these works, and also to make the overdue payments which have been temporarily postponed on account of the financial difficulties of the Port Commissioners.

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Copy of paragraph 6 forwarded to the Accountant General, Bengal, for information and guidance.

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Dated 18th July 1885.

Telegram from—The Financial Secretary, Bengal, Calcutta,  
To—The Finance Secretary, Simla.

Port Commissioners want sanction of Government to raise loan of 50 lakhs under Act II of 1885. They say that present is most favourable opportunity, and want early sanction to Notification under section 4. For Commissioners' purposes 50 lakhs will suffice for works within the next twelve months; but they represent that, if Government of India want immediate repayment of its advances amounting to 23½ lakhs, they would invite tender now for 75 lakhs and repay Government. The Lieutenant-Governor would support application for loan, but must leave India to decide whether it shall be 50 or 75 lakhs. Early orders by telegraph requested.

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Dated 19th July 1885.

Telegram from—The Financial Secretary, Bengal, Calcutta,  
To—The Finance Secretary, Simla.

Your telegram of this morning. Rate of interest 4½ per cent.

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No. 2107, dated 21st July 1885.

Telegram from—The Finance Secretary, Simla,  
To—The Financial Secretary, Bengal, Calcutta.

Your telegrams of 18th and 19th instant—Kidderpore Docks Loan. Government of India wish repayment of sums already advanced for Docks; and under section 4 of Bengal Act II of 1885, sanction the raising of a loan of 75 lakhs by Commissioners at rate of interest of 4½ per cent. per annum.

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No. 2321 T.—F., dated 7th October 1885.

From—J. WARE EDGAR, Esq., C.S.I., Offg. Secy. to the Govt. of Bengal, Finl. Dept.,  
To—The Secy. to the Govt. of India, Dept. of Finance and Commerce.

With reference to your No. 1828 of the 7th July, I am directed to forward, for the information of the Government of India, a letter from the Commissioners for making Improvements in the Port of Calcutta, No. 1710 of the 25th ultimo, reporting the complete failure of their attempt to raise in Calcutta the loan

of seventy-five lakhs sanctioned in your telegram of the 21st July, and soliciting that the Government should advance the amount required to complete the sanctioned work in progress, adding the sum to the consolidated debt due by the Commissioners; or, if this course be not open, should again ask the Secretary of State to withdraw the orders prohibiting the Commissioners from going into the London market for a sterling loan.

2. Looking to the acknowledged necessity for providing increased facility to the trade of the Port of Calcutta, to the progress made in taking up land and making arrangements for the construction of the dock, to the amount already expended on the work, and the liabilities incurred in connection with it, the Lieutenant-Governor considers that it would be superfluous to urge any further arguments in favour of completing an undertaking the necessity of which is so strongly represented in the letter from the Port Commissioners. The sole point which practically remains for consideration is the manner in which the required capital can be provided. But in addition to the amount needed for the construction of the docks, the Port Commissioners are in immediate want of funds to complete other sanctioned works of urgent importance, to replace their revenue balances and reserves, and to adjust the advances from time to time made by the Government. As is pointed out in the present letter, the result of the attempt to raise the guaranteed loan clearly shows that it would be useless to go to the market for an unguaranteed loan at present; and the Lieutenant-Governor would most strongly urge on the Government of India the desirability of aiding the Port Commissioners in this matter.

3. In Mr. Baker's letter No. 1415 T.—F. of the 25th June 1884, the Lieutenant-Governor proposed that the Government should advance the funds required for the construction of the docks by instalments as required, charging interest at 4 per cent. on such advances, and that when the works were completed the Commissioners should raise a loan upon an Imperial guarantee sufficient to enable them to repay the whole amount, principal and interest, so advanced by Government. Sir Rivers Thompson also suggested that if the Government of India should be of opinion that it was undesirable that the money should be advanced by Government, the Secretary of State might be moved to grant permission to the Port Commissioners to raise a guaranteed loan in the London market. He still adheres to the opinions expressed in that letter, and desires, in forwarding the present application of the Port Commissioners, to express his strong hope that the Government of India will be able either to advance the funds required to complete the work in progress, or to obtain the consent of the Secretary of State to a loan being raised in the London market.

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No. 1710, dated 23rd September 1885.

From—The Commissioners for making Improvements in the Port of Calcutta,  
To—The Secretary to the Government of Bengal, Financial Department.

We have the honour to submit, for the consideration and orders of His

(1) Port Commissioner's letter to Government of Bengal, No. 76, dated 10th April 1885.

(2) Government of Bengal to Government of India, No. 651 T.—F., dated 8th May 1885.

(3) Government of India to Government of Bengal, No. 1828, dated 7th July 1885, copy forwarded to Port Commissioners under cover of Government of Bengal's endorsement No. 1373, dated 20th July 1885.

(4) Government of Bengal to Port Commissioners, No. 1598 T.—M., dated 4th September 1885.

Honour the Lieutenant-Governor, the following remarks upon the several financial questions which have been the subject of previous correspondence in the communications noted in the margin.

2. In our letter No. 76, dated the 10th April 1885, we placed before Government a statement of the circum-

stances under which the Port Trust found it impossible to provide funds to carry on—

- (1) the construction of the Kidderpore Docks,
- (2) the construction of other works urgently required for the accommodation of the trade of the Port.

All these works, it was pointed out, had been duly sanctioned in accordance with the provisions of the Port Improvement Act, and, pending the issue of orders which would place the Trust in a position to borrow the necessary capital, the works had been carried on partly with the assistance of temporary advances made by Government, and partly by using the revenue balances and drawing against the reserve securities belonging to the Trust.

3. In paragraph 19 of the letter No. 76, above referred to, it was stated as follows :—

“ When the Commissioners undertook originally to carry out the dock works, they did so upon the condition that Government would advance at 4 per cent. such funds as would be necessary during construction, and on completion would sanction the raising of a guaranteed loan by the Commissioners at  $4\frac{1}{2}$  per cent. to repay the advances made during construction. Subsequently, to meet the views of the Government of India and the Secretary of State, they acquiesced, with some reluctance, in the condition laid down by the latter that assistance should not be given by a direct grant of funds from Government, but that the Commissioners should be empowered to raise a loan for the purpose under the guarantee of the Secretary of State. The Act necessary to legalise the construction of the docks by the Commissioners, and empowering them to raise a loan under Government guarantee to meet the cost, has been passed by the Legislative Council of the Government of Bengal, but has not yet received the sanction of the Governor General. The Commissioners are therefore at the present moment, twelve months after receipt by them of orders to take up the land, unable to take any measures for raising the necessary funds. ”

4. The notification giving the assent of the Governor General in Council to the Act referred to in the paragraph above quoted was published on the 23rd June 1885, and the Commissioners at once submitted to Government an application for the sanction required under section 4 of the Act (II B.C. of 1885) to raise a loan of 75 lakhs. This sanction was notified in the *Calcutta Gazette* of the 22nd July 1885, and the form of debenture having been approved by Government, tenders were invited for a guaranteed  $4\frac{1}{2}$  per cent. loan, this rate of interest having also received the approval of Government. The advertisement calling for tenders was published continuously in every important paper in India, English and Vernacular, for six weeks, and the Commissioners also placed themselves in communication with Messrs. Coutts and Company and Messrs. Matheson and Company, with a view to ascertain what response would probably be made to advertising the loan in the London market. In answer to this reference the Commissioners were advised that there was no prospect whatever of the successful issue of such a loan in London on any terms. With a guaranteed minimum rate of exchange for principal and interest, Messrs. Coutts and Company considered that the loan might be placed at a price to pay investors full 4 per cent., but that for an ordinary Indian currency loan, though supported by a Government guarantee, there was no prospect of success. Messrs. Matheson and Company were of opinion that a sterling loan properly secured on the revenues of the Port Trust without a Government guarantee would be more successful in the London market than a rupee loan with a Government guarantee. With this advice before them the Commissioners did not consider it worth while to advertise in London, but the date for receiving tenders was extended so as to give time for a reference to London from India in case Agents here desired to make their principals at home aware of the opportunity for investment.

5. The postponed date fixed for opening the tenders was 16th September 1885, and after recording *par* as the minimum rate to be accepted, the tenders for the loan were opened and found to be as follows:—

Amount tendered.	Rate.
	£ s. d.
1,000 @ . . . . .	99 0 0
2,000 „ . . . . .	98 0 0
2,000 „ . . . . .	97 8 0
1,500 „ . . . . .	96 0 0
13,000 „ . . . . .	95 0 0
4,000 „ . . . . .	94 0 0
500 „ . . . . .	93 8 0
500 „ . . . . .	93 4 0
3,700 „ . . . . .	93 0 0
3,000 „ . . . . .	92 8 0
3,000 „ . . . . .	92 0 0
5,000 „ . . . . .	90 0 0
1,000 „ . . . . .	85 0 0
<u>40,200</u>	

6. In reporting this result to Government, the Commissioners, while admitting that there are at the present moment some special circumstances, notably the great uncertainty in regard to the future of silver, which make the time an unfavourable one for raising the loan, desire to represent that they have always considered that it would be a very difficult matter for the Port Trust to raise even with a Government guarantee, so large a loan as that required for the construction of the docks. They have considered it essential to the success of the scheme that the money should be raised at a moderate rate of interest, and they have been consistent throughout in representing that the only chance of getting the capital on such terms would be for Government to raise the money and advance the sums required for construction as needed. At the first meeting at which the report of the Dock Committee came before the Commissioners they recorded a resolution embodying these as the terms upon which they would undertake, if Government sanctioned the works, to carry them out. It was upon the understanding that, either indirectly by a guarantee, or by direct advances, Government would assure the certainty of the required capital being forthcoming, that the Commissioners, urged thereto by Government, proceeded to take up the land, and made all arrangements for carrying out the works to completion with as little delay as possible. In this faith the present liabilities, so far as the dock works are concerned, have been incurred, and now that it has been shown that the assistance of Government in the form of a guarantee to a Port Trust Debenture loan will not enable the Commissioners to raise the necessary funds, other measures must be taken for providing the capital required if the works are to be carried on.

7. The Commissioners are as much convinced now as they have hitherto been of the importance of the dock works as affording the best means for giving facilities to the trade of the Port which are now urgently required, and the want of which will be still more felt in the event of there being any development of trade beyond its present limits. At a Conference held at the Chamber of Commerce so recently as the 28th August 1885, the representatives of the firms engaged in the export trade of the Port stated that, in the conduct of their business, they were most seriously hampered by the want of sufficient space in which produce brought down for shipment could be conveniently

stored, ready for shipment. For want of such space both at the East Indian Railway goods terminus on the Howrah side and at the jetties and wharves on the Calcutta bank of the river, charges were incurred in storing and moving produce which in ordinary seasons often absorbed the margin of profit, and at times when shipments would otherwise be largely increased proved an insurmountable obstacle to the development of the export trade. The Acting Agent of the Railway stated at the Conference that want of space prevented the Company from giving the increased facilities demanded by exporters, and it was also shown that there is not the space available on the Calcutta bank of the river to enable the Port Trust to give the accommodation required.

8. The Commissioners believe that the additional facilities already demanded by the trade can only be fully met by the construction of docks; and on this point they cannot do better than repeat the representation made in the closing paragraph of the note which accompanied their letter No. 76, dated the 10th April 1885—

“As railways extend, the sea-board terminal arrangements must be increased; such terminal arrangements can best be provided by docks, where railway wagons can be brought into sheds alongside of the vessels into which the goods are to be shipped. The docks at Kidderpore will really become the goods station of all the railways which lead into Calcutta, and must therefore be considered part of the railway system of Bengal. Without the docks the increased traffic to be carried on the railways cannot be economically worked, and the trade of Calcutta will suffer, and traffic on the railways be lost, if the terminal accommodation and appliances which the docks will provide, have not been constructed before these railways are completed.”

9. For these reasons the Commissioners desire again to urge upon Government the necessity for proceeding with the undertaking, for which a considerable amount of expenditure has already been incurred, and would submit for the consideration of His Honour the Lieutenant-Governor the expediency of asking the Government of India to again place before the Secretary of State the impossibility of the Commissioners raising the necessary funds, and request him to accord his sanction to the provision of ways and means in the manner originally suggested by the Commissioners when they first undertook to carry out the work, as explained in paragraph 3 of this letter.

10. So far the Commissioners have referred only to their difficulty in raising the money required for dock works, but they have now to submit for the consideration of Government the difficult position in which the Trust has been placed in regard to carrying out other sanctioned works of Port improvement which have to be paid for with borrowed capital. They desire to refer back to paragraphs 22 to 28 of their letter No. 76 of the 10th April, and to point out that as the circumstances therein stated had then debarred them from attempting to raise loans for other important works so long as the question of raising a guaranteed dock loan remained unsettled so now their failure to obtain any offers for the guaranteed dock loan must operate most seriously to their prejudice in going to the market for the smaller loan required to meet expenditure on ordinary works which should be constructed from borrowed capital.

11. In the opinion of the Commissioners any attempt to raise such capital now in the local market, except upon terms which would impose an unfair burden upon the trade of the Port, would be futile. The Commissioners are therefore, under present circumstances, precluded from replacing the revenue balances and discharging the other liabilities which they have incurred in carrying out works of Port improvement, which have received the sanction of Government, which are urgently required; and some of which cannot be stopped. All the works are essential to the convenience or security of the trade of the

Port. The large expenditure upon the Howrah foreshore wharves was incurred not only with the sanction, but with the express orders, of Government to push this work on to completion. The Tea Warehouse has been designed to meet, and has been accepted generally as meeting, a pressing need of one of the most important branches of the export trade of this Port. The construction of the Petroleum Wharf at Budge-Budge was resolved upon in order not only to provide a convenience for that particular branch of the import trade, but to secure the safety of the shipping of the Port from such a danger as was threatened in 1883 by the burning of the *Aurora*. The importance of this work is as pressing now as it has ever been. The construction of new light-vessels, now that there is not a single spare vessel in reserve, is a work so important to the safe navigation of vessels coming to the Port, as to be unquestioned. For all these works funds are urgently needed. Some have been stopped for the want of funds, but ways and means have to be found to meet drafts for the new light-vessel and for materials ordered from England for the Petroleum Wharf and the Tea Warehouse. All these works are absolutely necessary in the interests of the trade of the Port, and the present position in which the Commissioners are placed in regard to them is, in their opinion, principally due to the action taken on the question of loans for dock works.

12. The view taken of this part of the question by the Government of India is expressed in the following paragraph 4 of their letter, Department of Finance and Commerce, No. 1828, dated 7th July 1885 :—

“As arguments have been used, both by the Commissioners and the Government of Bengal, which seems to imply that some special responsibility rests with the Government of India in connection with the expenditure on these general works, I am to say that the Governor General in Council cannot accept any such contention. The circumstances are these: The Commissioners applied in February 1884 for permission to raise in London a loan of 30 lakhs for general purposes. The Secretary of State did not approve of local bodies raising loans in England; and in May 1884 the Commissioners were informed that they must borrow in India. In the meantime it had been decided to guarantee a loan of 20 lakhs for the construction of the docks, and it was represented to the Government of India that it would be, on financial grounds, inexpedient for the Port Commissioners to issue simultaneously proposals for a guaranteed loan of 20 lakhs and for an unguaranteed loan of 30 lakhs. Some correspondence followed, and finally the Government of Bengal submitted the proposals contained in the telegram of 2nd August 1884, and the letter of 4th August 1884, No. 1501. In paragraph 4 of the letter of 4th August it was said: ‘A solution of the present difficulty might be found if the Government of India could advance the Commissioners a sum of 15 lakhs;’ and, further on, in the same paragraph: ‘If the simpler and more satisfactory expedient of an advance from Imperial Funds pending the settlement of the general question of the sterling loan cannot be adopted, the obvious course is for Government, in supersession of the Notification of 19th ultimo, to announce that it will guarantee a loan of 30 lakhs to be raised, under the existing law, for general improvements.’ These proposals were understood to mean that either an advance of 15 lakhs should be made from Imperial Funds to enable the Commissioners to carry on the dock works, or that Government should guarantee a loan of 30 lakhs for general purposes, from the proceeds of which money could be advanced for the docks. The Government of India decided to accept the first of these alternative proposals and to advance 15 lakhs, and the Government of Bengal was informed that the proposed advance would be made in the telegram of 15th August, No. 2853, quoted in the margin. This decision obviously negatived the alternative plan of raising a guaranteed loan of 30 lakhs; and it rested with the Port Commissioners, on receipt of the telegram of 15th August, to take steps for obtaining the money they required by calling for ten-

*Telegram No. 2853, dated 15th August 1884.*

Your letter No. 1501, dated 4th—Calcutta Port Trust, Government of India will advance 15 lakhs to Port Commissioners, but is anxious that only so much of the advance be withdrawn from the public treasury before 1st

December next as is needful. Notification regarding guaranteed loan not to exceed 50 lakhs will be cancelled. Arrangements should be made to proceed with the necessary legislation without any avoidable delay so as to obviate future difficulties.

ders for an unguaranteed loan. Hence His Excellency in Council is at a loss to understand why it is stated in paragraph 23 of the Port Commissioners' letter that 'the Commissioners had every reason to expect that the loan of 30 lakhs required for their ordinary works would be guaranteed by Government'; or why in the concluding portion of paragraph 6 of your letter it is stated that 'no reply has yet been given to the questions connected with the loan of Rs30,00,000 for general improvements.'

13. The Commissioners desire to represent that, in this summary of the correspondence, no reference is made to the fact that the Government of India in the *Gazette* of the 19th July 1884, notified the sanction of the Government of India to the Commissioners raising a guaranteed loan of 50 lakhs, and that by a telegram from India to Bengal on the 3rd July, the Commissioners were informed of this intention, and were authorised to appropriate a portion of the proceeds of this loan for ordinary works of Port improvement, such as those above described. The Commissioners had no intention of putting forward, as alternative propositions, a request for an advance of 15 lakhs, or sanction to a guaranteed loan of 30 lakhs. The 15 lakhs were to be spent in acquiring land and starting the dock works, and the Commissioners asked Government to advance this amount, pending the decision of the Secretary of State upon the financial questions in connection with the dock scheme. The 30-lakh loan was required for certain other specific works making up that amount, a list of which was submitted to Government, and in respect of which a draft notification was prepared and received by the Commissioners under cover of your office letter No 959 T.G., dated 30th June 1884. The permission of the Government of India to raise a guaranteed loan of 50 lakhs for dock works, with power to appropriate what was needed for ordinary works, did away with the necessity for the notification by the Government of Bengal in respect of the unguaranteed 30-lakh loan. The advance of 15 lakhs to replace what the Commissioners had spent on dock works was not understood to negative the proposal to raise the 30-lakh loan, nor did it in any way lessen the Commissioners' need for that amount. Nor does it seem to have appeared in this light to the Government of India at the time, for in cancelling the notification for sanction to raise the 50 lakhs, it was stated (Resolution No. 2855, dated 15th August 1884) that the notification was cancelled because "it had been found impossible to proceed immediately with the legislation necessary to enable the Commissioners to raise a loan for the construction of the Docks." The Commissioners at that time, and for twelve months after, were left under the impression that as soon as the necessary legislative enactment had been passed, any guarantee to be given to dock loans would cover loans for other works. It was only in June 1885 that the Commissioners were informed that, notwithstanding the representations made to the Secretary of State by the Government of India, he could not agree to guarantee loans for any other works than the docks.

14. The Commissioners were of opinion that, had there been no legal objection to their raising the loan in July 1884 with the guarantee of the Government, and in the particularly favourable state of the money market then obtaining, they might have raised without much difficulty a sufficient sum to have covered all the liabilities incurred up to that time. The result of the attempt now made to raise money for the construction of the docks shows plainly that, in regard to smaller loans required for ordinary Port Works, it will be most difficult, if not impossible, for the Commissioners to raise the money in the local market at the rates they have hitherto paid, or indeed on any terms



which they would be justified in accepting. The experience which has now been gained both here in Calcutta and at Bombay proves that Port Trust Debentures are not popular with investors; they are not easily convertible, and the available capital which could absorb them finds a more profitable return than  $4\frac{1}{2}$  per cent. With a higher rate of interest and a Government guarantee, small loans might be raised, but the Commissioners consider it more advisable that Government should advance the amount required to complete the sanctioned works in progress and should add the sum to the consolidated debt incurred at a time when the Commissioners were prohibited by Government from borrowing in the open market, and drew all the capital required for Port improvement works from the Government treasury. If this course is not open to them, the only alternative available will be to ask the Secretary of State to withdraw the orders passed prohibiting the Commissioners from going into the London market for a sterling loan. The advance of the money as a loan by Government would be the simplest and most satisfactory solution of the difficulty. But if this advance cannot be made, the Commissioners think they may fairly ask that the Government shall not in any way impede their action in obtaining a loan from the public on the most favourable terms.

15. From the foregoing remarks it will be seen that the Commissioners are not at present in a position to meet the call referred to in your endorsement No. 1373, dated 20th July 1885, for releasing the securities held by the Bank to cover advances made. Nor are they able to state when they will be in funds to pay up the overdue claims of Government referred to in your letter No. 1598 T.M., dated 4th September 1885. A statement is appended to this letter, giving a summary of the total expenditure which had been incurred by the Commissioners and met from Revenue and Advances against securities instead of from Capital. A further statement shows the payments which have still to be met and for which money will have to be provided. From these statements it will be seen that to replace the revenue balances, and set free the securities and to meet all the liabilities incurred, the sum of ₹23,67,865 is immediately required without taking into account the balance required to complete the ordinary works now in progress—

	Dock works. Ordinary new works. Total.		
	₹	₹	₹
Expenditure to 31st August 1885 . . . . .	23,12,379	16,49,217	39,61,596
Accepted bills . . . . .	64,403	1,48,704	2,13,107
Bills still to be met . . . . .	2,80,000	2,88,162	5,68,162
	<u>26,56,782</u>	<u>20,86,083</u>	<u>47,42,865</u>
Less advances from Government . . . . .	22,50,000	1,25,000	23,75,000
NET TOTAL . . . . .	<u>4,06,782</u>	<u>19,61,083</u>	<u>23,67,865</u>

It will not therefore be possible for the Commissioners to do anything in the way of releasing their securities or repaying the advances made, and other sums due to Government, until the question of raising money not only for the construction of the docks, but also for carrying out other important works, has been finally settled.

16. As the matter is one of urgency in respect of the obligation to provide funds to meet liabilities incurred, and for which bills have been already accepted to a considerable amount, the Commissioners would solicit the favour of orders being passed with as little delay as the circumstances will permit.

*Expenditure on new works for which loans have to be raised.*

NAMES OF WORKS.	Expenditure to 31st August 1885 after deducting appropriations from loans already raised.	Expenditure for which drafts have been accepted, but not paid.	Bills still to be paid in respect of orders given.	Total.	Balance required to meet the full sanctioned expenditure.
	R	R	R	R	R
Dock works . . . . .	23,12,379	64,403	2,80,000	26,56,782	1,73,13,318
Howrah foreshore road . . . . .	9,70,084	17,356	1,19,162	11,06,602	1,04,342
Vessels for surveying and lighting . . . . .	1,66,532	48,162	1,06,000	3,19,694	...
Tramway . . . . .	1,65,362	...	...	1,65,362	...
Jetties . . . . .	1,45,053	...	...	1,45,053	...
Tea warehouse . . . . .	78,889	73,556	...	1,52,445	9,42,925
Wharves . . . . .	70,978	...	...	70,978	...
Petroleum wharf . . . . .	38,519	9,630	...	48,149	2,24,339
Dredger . . . . .	...	...	48,000	48,000	...
Minor works . . . . .	16,500	...	16,000	32,500	...
TOTAL . . . . .	39,61,596	2,13,107	5,68,162	47,42,865	1,86,15,824
Less—					
Amount received as temporary advances by Government, pending raising of loans . . . . .	23,75,000	...	...	23,75,000	...
NET TOTAL . . . . .	15,86,596	2,13,107	5,68,162	23,67,865	...

*Expenditure on new works for which loans have to be raised.*

NAMES OF WORKS.	EXPENDITURE TO END OF AUGUST 1885, AFTER DEDUCTING APPROPRIATIONS FROM LOANS ALREADY RAISED.		REMARKS.
	Amount.	Total.	
	R	R	
DOCK WORKS . . . . .	23,12,379	23,12,379	
HOWRAH FORESHORE ROAD—			
Boat wharf, landing stages, and tramway at Shalimar Point . . . . .	4,43,012		
Howrah foreshore road reclamation works . . . . .	3,93,875		
Spurs opposite the Howrah foreshore . . . . .	1,28,895		
Two new jetties for Ganges and Howrah Mills . . . . .	170		
Improvements in Sulkea Banda Ghât . . . . .	6,455		
Constructing spur between Messrs. Apear & Co.'s Jetty and Ganges Mills . . . . .	977		
		9,70,084	
VESSELS FOR SURVEYING AND LIGHTING—			
New steamer for Port approaches . . . . .	21,559		
One new light-vessel . . . . .	91,487		
New lamps for light-vessels and light-houses . . . . .	50,506		
		1,66,532	
TRAMWAY—			
Extension of tramway . . . . .	1,25,503		
New station on site of old workshop yard . . . . .	39,859		
		1,65,362	
JETTIES—			
Warehouses at Nos. 1 and 3 Jetties . . . . .	93,765		
Taking down No. 2 Import Shed and re-erecting it at No. 6 Jetty . . . . .	7,287		
New shed for No. 5 Jetty . . . . .	44,001		
		1,45,053	
TEA-WAREHOUSE . . . . .	78,889	78,889	

*Expenditure on new works for which loans have to be raised—contd.*

NAMES OF WORKS.	EXPENDITURE TO END OF AUGUST 1886, AFTER DE- DUCTING APPRO- PRIATIONS FROM LOANS ALREADY RAISED.		REMARKS.
	Amount.	Total.	
	R	R	
WHARVES—			
Two landing stages at Meerbohur and Chandpal Ghât for passenger traffic.	50,000		
Two landing stages at Grey's wharf and Cossipore . . .	20,078	70,078	
PETROLEUM WHARF . . . . .	35,819	35,819	
MINOR WORKS . . . . .	10,500	10,500	
		39,01,506	
Less amount received as temporary advances from Govern- ment pending raising of loan—			
Special advance for dock works received on 31st December 1884.	15,00,000		
Special advance to pay interest and sinking fund on Deben- ture loan, &c., received on 30th March 1885.	1,25,000		
Special advance to meet bills for capital works received on 12th May 1885.	4,00,000		
Special advance to pay for land for docks received on 1st June 1885.	3,50,000	23,75,000	
Amount required to replace revenue balances and to free so- curities held by the Bank of Bengal against overdrafts.	...	15,86,506	

*Expenditure for which drafts have been accepted but not paid.*

NAMES OF WORKS.	INDIAN MONEY.		Date when payable.	REMARKS.
	Amount.	Total.		
DOCK WORKS—	R	R		
Fifty sets of wheels and axles for ballast wagons.	20,034	...	23rd Sept. 1885.	
Fifty ballast wagons, four bearing wheels, and one volute spring.	41,369	64,403	4th Nov. "	
HOWRAH FORESHORE ROAD—				
Two screw-pile jetties . . . . .	...	17,356	4th Oct. "	
VESSELS FOR SURVEYING AND LIGHTING—				
Third instalment for the new light-vessel .	48,182	48,182	21st Oct. "	
TEA-WAREHOUSE—				
Columns, girders, &c., for tea-warehouse .	23,344	...	4th " "	
Ditto ditto . . . . .	19,043	...	28th " "	
Two ornamental iron balcony verandas .	25,169	...	1st Dec. "	
		73,556		
PETROLEUM WHARF—				
Four bridges for landing stages . . . .	9,630	9,630	4th Oct. "	
TOTAL . . . . .	...	2,13,107		

*Bills still to be paid on account of orders given.*

NAMES OF WORKS.	AMOUNT OF BILLS.		REMARKS.
	Amount.	Total.	
<b>DOCK WORKS—</b>	<b>₹</b>	<b>₹</b>	
Final payment to Messrs. Burn & Co. for lift bridge . . . . .	30,000		
Further payment to contractors on cement contracts . . . . .	1,50,000		
Other works . . . . .	1,00,000	2,80,000	
<b>HOWRAH FORESHORE ROAD—</b>			
Further payment for acquisition of land . . . . .	93,000		
To erect jetties at Howrah . . . . .	26,162	1,19,162	
<b>VESSELS FOR SURVEYING AND LIGHTING—</b>			
Final payment for one new light-vessel . . . . .	1,05,000	1,05,000	
<b>DREDGER—</b>	48,000	48,000	
Minor works . . . . .	...	16,000	
<b>TOTAL</b> . . . . .	...	5,68,162	

No. 295, dated 20th October 1885.

From—The Government of India,

To—The Secretary of State for India.

In continuation of our Financial Despatch of the 8th of August last, No. 218, we have the honour to forward a copy of the papers noted in the annexed schedule, reporting the failure of the Port Commissioners of Calcutta to raise the loan of 75 lakhs which they recently offered to the public in order to provide funds for the construction of the Kidderpore Docks, and to repay the advances made to the Port Trust by Government from time to time.

2. So far as we have been able to learn, the extreme uncertainty at present hanging over the future of silver and the consequent instability of rupee investments may be regarded as the main causes of the failure of the loan. The large ultimate amount of money to be borrowed for the construction of the dock, the probable demands of other local bodies for considerable sums at an early date, difficulties in placing local loans experienced by banks and others who take them up, and the doubts which exist as to the policy of the Government in regard to the market for its own borrowings, have added to the difficulty. The immediate object for consideration, however, is as to the course which must now be adopted to relieve the Trust from its financial embarrassments.

3. Four methods of obtaining the funds required for the prosecution of the dock works have at one or other time been suggested in the course of correspondence on the subject between Your Lordship and ourselves, *viz.*, that the Government should raise the money and lend it to the Trust; that the Trust should raise the money in London on a Government guarantee; that they should raise it in London without a Government guarantee; or, finally, that they should raise it in India on a Government guarantee. The last method commended itself to Your Lordship's predecessor; it has accordingly been tried, but has failed. It remains to consider whether any of the other courses should now be adopted. The second is open to great objection, for the Government will very

possibly have to borrow in the London market next year; and if the Port Trust is allowed to enter the London market, it will compete with the Government. The third course we do not believe to be practicable; for, especially in the present state of the market for Indian securities, an hitherto unknown applicant like the Calcutta Port Trust could hardly raise the money without a Government guarantee. There remains then only the first course. If the borrowing necessitated by our own requirements, with which Your Lordship is fully acquainted, admit of it, the best method of raising the money required would be, in these circumstances, that which we have indicated in the first of the four courses above specified; and should it be thought that the sum, present or prospective, which must be raised on account of the Port Trust, will not prejudice our own operations, this is the course which we recommend to Your Lordship's favourable consideration.

4. We are not prepared to recommend stopping the dock works, in the face of the strong opinion expressed by the Bengal Government and the Port Commissioners.

5. In regard to the other sanctioned works for the improvement of the Port, for which funds are required, we think that, if Your Lordship agrees to the money for the dock works being raised in the manner we have advised, the Commissioners should be left to raise a loan in the local market, as hitherto, for purely Port Trust purposes. There is doubt whether they would be able to raise the money they require at reasonable rates during the present silver crisis, and so long as uncertainty exists as to the market of our own operations next year; but we see great objection to extending a guarantee to this class of operation, and we cannot at all admit the contention of the Commissioners that they were encouraged to believe that such a guarantee would be extended to them.

6. We request that Your Lordship's decision on the subject may be communicated to us with as little delay as the circumstances will permit, and by telegraph.

No. 377 (Finl.), dated 17th December 1885.

From—The Secretary of State for India,

To—The Government of India.

I have considered in Council your letter, dated the 20th of October, No. 295, forwarding papers relative to the failure of the Port Commissioners of Calcutta to raise the loan of 75 lakhs guaranteed by Government, which they recently offered to the public in order to provide funds for the construction of the Kidderpore Docks, and to repay the advances made to the Port Trust by Government from time to time.

2. You are not prepared to recommend that the works at the Kidderpore Dock should be stopped, in the face of the strong opinion expressed by the Bengal Government and the Port Commissioners; and you propose that the money required for those works should be raised by Government and lent to the Trust, provided that the adoption of this course will not prejudice the borrowing necessitated by the requirements of your Government.

3. You add that the Commissioners should be left to procure by loans in the local market, as hitherto, the funds required for purely Port Trust purposes.

4. Having regard to the financial arrangements proposed by your Government for the coming year, and to the state of your balances, it appears to me probable

that large sums will have to be provided in 1886-87 by borrowing in the London market; and I am, therefore, only able to accede to your recommendation that Government should advance to the Port Trust the money, as required, for the construction of the Kidderpore Docks, on the condition that the funds are raised in India by means of a rupee loan.

5. The rate of interest to be charged to the Commissioners should, in my opinion, be the rate at which you are borrowing money in India in the year in which the advances are made, with an addition of one per cent. as a sinking fund for the repayment of the principal debt.

6. I have also had before me in Council your telegram of the 5th of November and letter of the 10th November, No. 311; and, subject to the same conditions as in the case of the Kidderpore Docks, I authorise your Government to advance to the Bombay Port Trust the funds required for the extension of the Bombay Docks, estimated at 96 lakhs in your letter of the 29th of August 1884, No. 44 (Public Works).

7. I am satisfied that the circumstances of the case are such that it is not desirable to press upon the Port Trust the construction of the dry dock; and I concur with your Government in thinking that the widening of the entrance of the wet dock and the increase of its depth must be regarded as necessary, and I see no reason for accepting the charge for these modifications of design.

"Your Financial letters No. 295, 20th October last, No 311, 10th November, and your telegram of 5th November. Proposed arrangements sanctioned, on condition that money is borrowed in India, rate of interest charged being actual rate of borrowing plus one per cent. for sinking fund. Inform Bombay."

8. In accordance with the request contained in the concluding paragraph of your letter of the 20th of October, I addressed to Your Excellency on the 8th instant a telegram, of which a copy is given in the margin.

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No. 282, dated 19th January 1886.

Telegram from—The Government of India,  
To—The Secretary of State for India.

Your Lordship's Financial Despatch No. 377 of 17th ultimo. Calcutta Docks. Calcutta Port Commissioners object to one per cent. sinking fund, except on conditions similar to those contained in section 5 of Bengal Act II of 1885. We recommend acceptance. Please telegraph reply.

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Dated 26th January 1886.

Telegram from—The Secretary of State for India,  
To—The Government of India.

Yours nineteenth—Calcutta Port Trust. Repayment may be deferred for four years: then one per cent.

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No. 585, dated 6th February 1886.

From—J. WARE EDGAR, Esq., C.S.I., Offg. Secy. to the Govt. of Bengal,  
Municipal Department,

To—The Secy. to the Govt. of India, Dept. of Finance and Commerce.

I am directed to acknowledge the receipt of Mr. O'Connor's letter No. 468, dated the 29th ultimo, forwarding a copy of a telegram addressed to the Secre-

tary of State and of his reply regarding the provision of a sinking fund of one per cent. towards the repayment of the proposed loan for the construction of the Kidderpore Docks. The Government of India desire to be furnished with the views of the Port Commissioners and of the Government of Bengal on the decision of the Secretary of State in the matter.

2. In reply, I am directed to submit, for the information of the Government of India, the enclosed copy of a letter \* from the Vice-Chairman of the

\* No. 2658, dated 4th February 1886.  
Port Commissioners, from which it will be seen that the Commissioners decline to accept the Secretary of State's decision if it is intended by it that a sinking fund of one per cent. is to be invested at the end of four years from the date on which each instalment of the loan required for the dock works is raised. If the terms already proposed by them cannot be sanctioned, they will be prepared to accept the loans subject to the condition that they may be required at any time, not less than four years after the completion of the works, to provide a sinking fund of one per cent. for the repayment of the capital, should the Government of India consider it advisable to order such investment.

3. The Lieutenant-Governor desires to express a hope that the offer now made by the Port Commissioners will be accepted by the Government of India and by the Secretary of State. I am to point out that, when the estimates were framed, no provision was made for a sinking fund during the period of construction, and that it seems clear that the Secretary of State could not have meant that a portion of the money borrowed should be set apart for the repayment of the loan which would be the result of beginning the contribution to the sinking fund before the completion of the works, and therefore before the Dock scheme could possibly give any return for the outlay expended upon it.

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No. 2658, dated 4th February 1886.

From—W. DUFF BRUCE, Esq., C.E., Vice-Chairman to the Commissioner for making Improvements in the Port of Calcutta,

To—The Secretary to the Government of Bengal, Municipal Department.

I have the honour to acknowledge the receipt of your endorsement No. 451, dated the 29th January, forwarding a copy of letter No. 468 of the same date, from the Assistant Secretary to the Government of India, Department of Finance and Commerce, enclosing copies of a telegram to the Secretary of State and of his answer thereto, regarding the provision of a sinking fund of one per cent. towards the repayment of the proposed loan for the dock works, and desiring that it may be ascertained whether the Commissioners accept the decision contained therein.

2. The question has been again considered by the Commissioners, who desire me in reply to forward the following resolution which they have passed on the subject:—Resolved that in reply Government be informed that the Commissioners cannot accept the decision of the Secretary of State, if they correctly understand it to mean that a sinking fund of one per cent. is to be invested at the end of four years from the date on which each instalment of the loan required for the dock works is raised. If the Secretary of State will not sanction the terms proposed by the Commissioners and recommended by the Government of India, the Commissioners will agree to accept the loans subject to the condition that they may be required at any time, not less than four years after the completion

of the works, to provide for a sinking fund of one per cent. for the repayment of the capital, should the Government of India consider it advisable to order such investment.

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No. 725 (Financial), dated 12th February 1886.

Telegram from—The Government of India,

To—The Secretary of State for India.

Your telegram of 26th January—Calcutta Docks. Port Commissioners will not accept condition, unless it is understood to mean that Government will have power to order formation of sinking fund at any time not less than four years after completion of works. We recommend acceptance of this proposal; the earlier bringing into operation of sinking fund possibly entailing diversion to such fund of part of loan itself.

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Dated 23rd February 1886.

Telegram from—The Secretary of State for India,

To—The President in Council.

Your telegram in the Finance Department, dated 12th February. I accept your proposals.

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### Bombay Docks.

No. 19 P.W., dated 30th April 1885.

From—The Secretary of State for India,

To—The Government of India.

In your letter No. 59 P.W. of the 10th November last, you describe the measures which had been taken at Bombay, with the concurrence of your Government, for extending the present dock accommodation there, at an estimated cost of Rs93,68,662, including a sum of Rs10,11,301 for interest on capital while the work is being executed.

2. Upon receipt of this letter and of the plans which followed, I communicated the same to the Lords Commissioners of the Admiralty, and requested to be furnished with any suggestions which they might wish to offer in respect to the work as affecting vessels of Her Majesty's Navy; and at the same time I enquired (with reference to former correspondence) whether they would desire to make any further proposals on the subject of a dry dock suitable for ships of Her Majesty's Navy.

3. I forward herewith copy of the correspondence\* which has passed between

\* Letter to the Secretary to the Admiralty, dated 21st January 1885.

Ditto from ditto, dated 30th March 1885.

Ditto to ditto, dated 29th April 1885.

the two Offices, by which you will see that, with regard to the proposed extension of the existing docks, for which I understand a contract has been made,

the Admiralty agree in the opinion of your Government that the entrance of the new wet dock should be at least 80 feet wide, and as respects a dry dock, they consider the immediate provision of such accommodation for ironclad ships "a matter of vital importance for the defence of India and its commerce."



4. Your Excellency will have received my telegram of the 9th instant, in which I informed you that Sir John Coode, who is about to advise the Admiralty on the question of docks at Trincomalee and Singapore, has been instructed to visit Bombay, and to report to Your Excellency his opinion on the best site for a dry dock there, and on the suitable dimensions for it, and I requested

\* Letter to Sir John Coode, dated 30th March 1885.

Ditto from ditto, dated 30th March 1885.

Ditto to ditto, dated 31st March 1885.

Ditto from ditto, dated 31st March 1885.

that, if you required him to prepare estimates for the same, you would give him the necessary instructions accordingly. The correspondence\* with Sir

John Coode is forwarded herewith for your information.

5. I anticipate Your Excellency's concurrence in the view entertained by Her Majesty's Government, that the time has arrived when this work should be taken in hand, and it is therefore unnecessary to enter into a consideration of the grounds which have convinced them that it has become a matter of urgent importance. I have to request that, upon your receiving Sir John Coode's report, the subject may receive the careful consideration of your Government, and that you will give me the result of your deliberations, and inform me how, in your opinion, the work can best be carried out, furnishing at the same time the necessary estimates both as to its cost and the period that will be occupied in completing it.

6. It is matter for regret that the Port Trust is not disposed to undertake the work. It may be worth while for your Government to consider whether any further suggestions could not be made by which their objections might be overcome.

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No. P.W. 2324—84, dated 21st January 1885.

From—J. A. GODLEY, Esq., Under-Secretary of State for India,  
To—The Secretary to the Admiralty.

I am directed by the Secretary of State for India in Council to transmit herewith, for information of the Lords Commissioners of the Admiralty, copies of two plans which have recently been received from India, showing the nature of the extension of the existing wet dock accommodation at Bombay which has recently been commenced by the Port Trustees of that harbour. In forwarding these plans to this Office, the Government of India observe as follows:—

“At the time when the present dock was constructed, it had been foreseen that an extension might probably be required; in view of this extension a space was left in the dock wall for the connecting entrance between the old dock and the new one. The extension now proposed is designed on the lines originally contemplated, and is, in fact, little more than a duplicate of the old one. Both the designs and the estimates follow the precedent of the old dock closely; they are, therefore, to be received with confidence.

“The water area of the Prince's Dock is 30 acres; that of the extension is 24½ acres. But although the area of the extension will be less than that of the Prince's Dock, the former dock, owing to the arrangement of jetties, will give accommodation to a larger number of ships than the latter. The Prince's Dock has quay berths for sixteen ships; the extension will accommodate nineteen. The arrangement is one which appears to be suited to the circumstances, and to the land to be devoted to the dock; but, while it accommodates a larger number of ships in a smaller area than either the Prince's Dock or the proposed Calcutta Dock, it is one not equally convenient for the in-coming and out-going vessels.

“The sill of the entrance to the new dock has been fixed two feet below the level of the existing one; this appears desirable, for, although very little inconvenience is felt in the Prince's Dock in consequence of the level of its sill, it does sometimes occur that ships have to be removed from that dock to complete their freight. Con-

cerning the width of the entrance from the harbour, we are about to address the Government of Bombay; the drawings show this entrance to be 66 feet wide, it has to be considered whether this figure should not be increased to 80 feet, in order that the dock may be available to the larger ships of Her Majesty's Navy."

I am desired to request that you will bring these remarks and the accompanying plans to the notice of the Lords Commissioners of the Admiralty, with a view to any suggestions they may have to make in respect to the work as affecting vessels of Her Majesty's Navy being furnished to this Office for transmission to the Government of India. I am to add, as regards the question of width of entrance to the new dock, alluded to in the remarks of the Government of India quoted above, that the entrance to the proposed new Calcutta Docks has been fixed at 80 feet.

Lord Kimberley desires further, in connection with this subject, to direct the attention of the Lords Commissioners to the recent correspondence which has passed with this Office relative to the construction of a dry dock at Bombay suitable for the use of the ships of Her Majesty's Navy, and to inquire whether there appears to their Lordships to be any advantage in considering this matter while the new wet dock design is still only about to be commenced upon, and whether they would desire to make any further proposals on the subject. The great general importance of the object to be secured by the suggested dry dock is so manifest that the Secretary of State for India would be prepared to press upon the attention of the Government of India any proposals which might be put forward by the Admiralty with a view to the provision of dock accommodation which might be deemed of national importance, subject only to the consideration that no undue burthen should thereby be thrown on the revenues of India.

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No. D. W. 3159, dated 30th March 1885.

From—R. D. AWDREY, Esq., pro Secretary to the Admiralty,

To—The Under-Secretary of State for India.

With reference to your letter of the 21st January 1885, P. W. 2324, transmitting copies of two plans showing the nature of the extension of the existing wet dock accommodation at Bombay which has recently been commenced by the Port Trustees of that harbour, I am commanded by the Lords Commissioners of the Admiralty to state, for the information of the Secretary of State for India in Council,—

1. That the Admiralty have no suggestion to offer with regard to the plan for the proposed extension of the existing docks of the Bombay Port Trust at Moody Bay.

2. That the Admiralty concur in the opinion expressed by the Government of India that the entrance of the new wet dock (the sill of which has been fixed two feet below the level of the existing entrance) should be at least 80 feet wide, in order that the dock may be available for the larger ships of Her Majesty's Navy.

3. Their Lordships fully agree with the Earl of Kimberley that the provision of dry dock accommodation at Bombay is a matter of national importance. They are unable to express an opinion as to the weight which is to be given to the objections made by the Port Trust to the work being connected with the extensive works now proposed by that Trust; but they desire once more to urge upon the Secretary of State for India in Council the pressing necessity that exists for the immediate provision of a dry dock for ironclad ships at Bombay as a matter of vital importance for the defence of India and its commerce.

The dimensions of such a dock, to admit ships of the *Inflexible* class, and longer ones, should be as follows :—

	Feet.
Length from stern to head at broad altar . . . . .	500
Width of entrance at coping . . . . .	94
Depth over sill at the lowest high water (if possible) . . . . .	30

4. I am to add that Sir John Coode starts on the 31st March for Singapore and Trincomalee on his way to Australia.

My Lords desire me to mention this fact, as they think it very important that the Secretary of State for India in Council should take advantage of this opportunity to obtain Sir John Coode's opinion as to the best site for the dock. If so, it could no doubt be arranged that he should visit Bombay for the purpose.

No. 604 P. W., dated 29th April 1885.

From—J. K. CROSS, Esq., Under-Secretary of State for India,  
To—The Secretary to the Admiralty.

I am desired to acknowledge the receipt of your letter, dated 30th March 1885, in reply to that addressed to you on the 21st January last, regarding the extension of the existing dock at Bombay, and the construction of a new dry dock suitable for ships of Her Majesty's Navy.

Lord Kimberley is glad to find that the Lords Commissioners of the Admiralty agree with him that the latter work has become a matter of national importance. I am directed to inform you that in view to taking immediate measures to enable a decision to be passed on the subject, Lord Kimberley has, in accordance with the suggestion contained in your letter of 30th March, taken advantage of Sir John Coode's visit to Ceylon to request him to examine the proposed sites at Bombay, and to advise the Government of India as to which, in his opinion, is the best position for the dock, and what its dimensions should be.

The Government of India have also been requested to take the subject into their early consideration, and, upon receipt of their proposals, a further communication will be made to the Admiralty.

No. 571, dated 30th March 1885.

From—J. A. GODFREY, Esq., Under-Secretary of State for India,  
To—SIR JOHN COODE.

Having been informed by the Lords Commissioners of the Admiralty that you are about to visit Trincomalee and Singapore, on their behalf, on your way to Australia, I am instructed by the Secretary of State for India in Council to inquire whether you could take the same opportunity of visiting Bombay, and reporting to the Government of India your opinion on the best site available at that port for a dry dock suitable for ships of Her Majesty's Navy, also as to what the dimensions of such a dock should be.

I am at the same time directed to request that you will have the goodness to state the amount of your charges, in the event of Lord Kimberley availing himself of your services for the purposes in question.

Dated 30th March 1885.

From—SIR JOHN COODE,

To—The Under-Secretary of State for India.

In reply to your letter of this date, I beg to state that with my visit to Trincomalee and Singapore I should be able to combine an inspection of the port of Bombay, in order to examine and report to the Government of India my opinion on the best site available at that port for a dry dock suitable for ships of Her Majesty's Navy, and also as to what the dimensions of such a dock should be.

In the event of Lord Kimberley desiring to avail himself of my services for the purpose in question, my fee would be four hundred guineas (420*l.*), including expenses of myself and an assistant, who would accompany me.

If, in addition to the above services, an approximate estimate of the cost of the work is required from me, as in the case of the inspections I have undertaken for the Admiralty at Trincomalee and Singapore, I should have to send home such particulars as would enable the requisite calculations to be made in my office in England, and there would in that case be an additional fee of one hundred guineas (105*l.*).

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No. 582 P. W., dated 31st March 1885.

From—J. A. GODLEY, Esq., Under-Secretary of State for India,

To—SIR JOHN COODE.

I am directed to acknowledge the receipt of your letter of this day's date, in which you state, in reply to my letter of yesterday, that with your visit to Trincomalee and Singapore you would be able to combine an inspection of the port of Bombay, in order to examine and report to the Government of India your opinion on the best site available at that port for a dry dock suitable for ships of Her Majesty's Navy, and also as to what the dimensions of such a dock should be.

In reply, I am desirous to inform you that Lord Kimberley will be glad to avail himself of your services for the purposes specified, and agrees to the terms you have proposed, which he understands are regulated on the same scale as similar charges are to be made for the services which you are about to render to the Admiralty.

With regard to the question of estimates, I have to request that you will obtain the instructions of the Government of Bombay on the subject. In the meanwhile, the Governments of India and Bombay will be duly informed of your visit and of its objects, and will be requested to give you such facilities as they may be able to afford to accelerate your movements. I forward herewith certain documents\* and plans connected with the proposed dock, which will assist you in considering the matter referred for your judgment.

\* Military (Marine) letter from the Government of India, No. 40 of 28th October 1883, and enclosures.

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Dated 31st March 1885.

From—SIR JOHN COODE,

To—The Assistant Under-Secretary of State for India.

I beg to acknowledge the receipt of your letter† of this date, with enclosures, in which you intimate the acceptance of the terms in my letter of yesterday for the inspection of the port of Bombay, in order to examine and report to the Gov-

† No. 40 of 1883, and two annexed Reports.

ernment of India my opinion on the best site for a dry dock suitable for ships of Her Majesty's Navy, and also as to what the dimensions of such a dock should be.

With regard to the preparation of an estimate for the proposed work, I will, as requested, obtain the instructions of the Government of Bombay on this subject.

I have been kindly furnished by the Director of Works of the Admiralty with charts of Bombay, which will facilitate my investigations, and will look for any other documents which may be required from the authorities at Bombay.

No. 57 P. W., dated 2nd December 1886.

From—The Secretary of State for India,

To—The Government of India.

Since my predecessor addressed you on the 30th April 1885, by his Public Works Despatch No. 19 of that year, on the subject of increased dock accommodation at Bombay, I have been supplied by Sir John Coode with his report on the best measures to be adopted for the provision of a dry dock in the Bombay Harbour. Copies of Sir J. Coode's report, with accompanying plans, are transmitted with this letter for the information of Your Excellency's Government and the Government of Bombay, together with comments on the same by the Lords Commissioners of the Admiralty and the Military Secretary in this Office.

2. Your Excellency will learn from these papers that Sir J. Coode has recommended the construction of a dry dock capable of accommodating the largest type of vessel in Her Majesty's Navy at an estimated cost of 265,000*l*, and further suggests the necessity for additional floating basin accommodation for gunboats and torpedo boats.

3. I request, therefore, that the matter may at once be considered by your Government, and that you will furnish me with your views as to the measures which should be taken for carrying out Sir J. Coode's proposals, together with carefully prepared estimates of the cost of the work, and I will obtain and forward, for your information and guidance, such drawings, &c., as may be thought likely to assist your Engineers in carrying out this important duty.

4. All preliminary steps may, meantime, be taken for the commencement of operations. It will be within Your Excellency's recollection that my predecessor, in his Despatch of 30th April 1885, expressed the opinion of Her Majesty's Government that the time had come when this work should be taken in hand as a matter of urgent importance. In this opinion I desire to say that I entirely concur.

No. 1 P. W. 1018—86, dated 11th June 1886.

From—SIR JOHN COODE,

To—The Under-Secretary of State for India.

Adverting to your letter noted in the margin, I have now the honour to submit my report on the best site available at Bombay for a dry dock suitable for ships of Her Majesty's Navy.

I should here explain that I visited Bombay in May of last year, and made an inspection of the port, including Hog Island, and, after fully considering all the circumstances of the case, arrived at the conclusion that the best site for

such a dock would be within the existing naval yard. I accordingly arranged with Captain Hext, R.N., Director of the Indian Marine, that the necessary borings and technical observations should be placed in charge of the staff officer at Bombay Dockyard (Captain A. Campbell, I.M.), and they have since been most satisfactorily executed under his immediate direction and supervision. I found the final instalment of the investigations on my return to England from Australia, having proceeded there to fulfil a professional engagement after leaving Bombay.

It is satisfactory to learn that the placing of a dock within the existing dockyard had, after lengthened inquiry, been recommended by a Committee appointed in 1882 by the Government of Bombay. This Committee was presided over by Lieutenant-Colonel W. Merriman, R.E., and in the Minutes of their proceedings dated 21st March 1883 I find the following remarks:—

“The Committee are of opinion, however, that, notwithstanding the many advantages Hog Island possesses as a site for a graving dock for the use of Her Majesty’s ships, it should be premature to construct one there unless Government are prepared to include in the scheme the provision of workshops and other conveniences in connection with the dock, so that the dock and the necessary establishments may be together, or are contemplating the removal to Hog Island of the whole of the buildings, machinery, and establishments of the Bombay Dockyard, a change of serious importance and involving a vast outlay of money;” and in the summary of their Report, dated 12th May 1883, they further say:—

“Taking into consideration all the suggestions for sites for a large dock, *viz.*, at Elephanta, and Butcher’s Island, Hog Island, and the Prince’s Dock, the Committee are of opinion that the wishes of the Admiralty should be carried out by constructing a dry dock in Her Majesty’s Dockyard at Bombay, on Captain Trevor’s plans of 1867 (subject to modification), and so favourably reported upon by the Director of Works at the Admiralty.”

These extracts are entirely in accord with the views I entertained, and the conclusions at which I arrived at the time of my inspection of the port.

Accompanying this report are four illustrative drawings. No. 1 is a general chart of Bombay Harbour, and No. 2 a chart of the port of Bombay between the Sassoon Dock at the north end of Kolaba and Prince’s Dock at Mazagon.

On Nos. 1 and 2 will be found the course or track of vessels when passing into and out from the dock proposed; these tracks are indicated by blue dotted lines.

I desire to call attention to the contour shading on Drawing No. 2, as it shows the advantages possessed by this part of the port, in respect of the greater depth of water existing close to the shore in the immediate locality of the dockyard, as compared with the depths along the water frontage to the north and south of it, thus indicating that the depth in the entrance channel, if not self-maintaining, will be far more easily kept open than at any other part of the frontage.

Drawing No. 3 is a plan of a portion of Bombay Dockyard, showing the site which I recommend for the proposed dock, guide pier, and deep-water channel.

Drawing No. 4 is a plan on a scale of 40 feet to an inch, showing in detail the buildings, graving docks, &c., now existing at the northern end of the dockyard, and the general scope and character of the proposed works.

Upon referring to the drawings above named, whereon the works I have to recommend for execution are shown by red colour, it will be seen that I propose to place the graving dock almost parallel to the Bombay and Duacan Docks, and at a distance of about 150 feet from the former.

The following are the general dimensions of the proposed dock :—

	Feet.
Length of floor from inside of caisson to head . . . . .	500
Breadth of bottom between altars . . . . .	63
Breadth at coping . . . . .	126
Breadth of entrance . . . . .	94
Depth over sill at high water of ordinary spring tides . . . . .	38
Ditto ditto ditto neap tides . . . . .	35
Ditto at low water ditto ditto . . . . .	29
Ditto ditto ditto spring tides . . . . .	26

The dimensions and form adopted for the dock are almost precisely similar to those of the Malta Dock now in course of execution, which work, I believe, embodies all the improvements which have been introduced to date, and is in accordance with the most recent practice in the Government dockyards. Particulars of the work at Malta have been kindly furnished to me by the Director of Works of the Admiralty.

If it is desired, as doubtless it will be, that provision should be made at Bombay for docking the largest class of ships, thereby necessitating what is known in the service as a "first class dock," a structure of less width and depth than that just described and shown on the accompanying drawings would not be suitable.

Although a dock of this capacity would afford perfect accommodation, nevertheless it would, of necessity, entail a very considerable expenditure in its execution. I have provided in the estimate, hereinafter given, for the construction of a work of this class; if, however, a dock of less dimensions, and with a diminished depth over the sill, should be deemed sufficient to meet the requirements, the expenditure would be reduced to a corresponding extent.

The dock would be constructed entirely on blue basaltic rock, and a considerable proportion of the excavation would be in that material. It is not probable that any difficulties will be experienced from water issuing from fissures, but should such arise in execution they will have to be dealt with as necessity may demand.

The dock sides, altars, and entrance throughout would be formed entirely of stone, principally of the local blue basalt, the material from the excavation being utilized in the work wherever practicable. The invert at the entrance, caisson groove, and stop would be of granite.

I have adopted a ship-shaped in preference to a sliding caisson for the entrance, not only on account of economy in first cost, but as iron structures at Bombay are subject to considerable "pitting" near the water surface, a caisson of this type would be more readily reversed for scraping the sides, cleaning, and painting.

In connection with the dock suitable centrifugal pumps would be provided, driven by compound engines, embodying all the latest improvements, the capacity of these pumps and the power of the engines being such as to ensure the complete emptying of the dock in four hours. Discharge pipes would be carried from the pumps through the eastern face of the existing breakwater, their outfalls being placed at low-water level, thus acting as syphons, and thereby reducing the lift of the pumps from the precise level of the water in the graving dock to that of the sea for the time being.

The drawings also show the form of guide pier and wing walls which I would recommend for execution, together with the position of the caisson berth, the latter being on the north side of the entrance, and immediately adjacent thereto.

The guide pier would be 420 feet in length, measured from the end of the

existing breakwater, the total length of pier and wing wall in connection therewith being 600 feet measured from the entrance to the proposed dock.

The bottom along the line of the pier is of such a character as to necessitate a somewhat expensive structure, and the more so as provision must be made for subsequent dredging and deepening alongside this work to afford an adequate depth in the approach channel, to which I shall presently refer. In the estimate hereinafter given I have provided for the effective execution of this pier by continuous timbering, internal dredging, and filling in solid with cement concrete *en masse*, to produce a thoroughly substantial structure, suitable to the conditions of the case. The inner face would be fendered throughout, so that vessels might freely use the pier as a guiding and warping structure in entering and leaving the proposed dock.

I have indicated on Drawings 1 to 3, inclusive, the extent to which the bottom would require to be deepened in order to form the entrance channel. In determining the width of this channel I have kept in view the present conditions of approach to the dockyard, and departure therefrom, as kindly explained by Captain Campbell, and laid down on a trace, which he was good enough to hand me. The formation of the channel, as shown, will admit of the handling therein of long ships, precisely in the same manner as the smaller craft now enter and leave the existing docks. In order to afford a margin of depth, it will be observed that I propose the bed of the channel throughout should be two feet below the sill level of the new dock.

For the formation of the channel a considerable quantity of sub-marine blasting will be required; the dock itself, including the entrance and wings, would be constructed in a dried area, within a suitable piled cofferdam, and as much of the rock as possible, compatible with the safety of the dam, would be excavated previous to the removal of the piling. On the taking down of the dam the rock and overlying softer material on its site would be removed, and the whole channel thrown open and made available for use.

As before intimated, the fact that the depth immediately seaward of the present entrance is so well maintained augurs well for the continuation of the improved depth in the proposed channel when executed. Some deposit may, however, be looked for, and, in considering any scheme for a dock at Bombay, the removal of such accretion is an element of expenditure which should be kept in view; at no other site, however, could the work be carried out with a probability of a smaller outlay in subsequent dredging for the purpose of maintaining the area deepened to the full extent.

I estimate the cost of the graving dock complete with wing walls, culverts, caisson, pumps, engines, and boilers, also the guide pier, dredged channel, including rock removal, and all the necessary fittings and appliances to render the dock and undertaking complete, at the sum of 265,000*l*. This amount includes an adequate allowance for contingencies and for supervision, and has been based on rates for which, I believe, a competent contractor would undertake to carry out the works in a thoroughly substantial manner. The quantities have been very carefully calculated, and the estimates have been prepared with special care, so that the amount abovenamed may be considered as reliable.

With regard to the question of defence, the site of the new dock is already protected to a great extent on the west and north-west by the existing batteries at Malabar Point and Mahalukshmi, both about three miles to seaward of it, and by the existing battery on the eastern face of Kolaba Point, and the subsidiary battery now being, or about to be, constructed on the western face of the same point near the Lunatic Asylum.



On the eastern or harbour side the dockyard is protected by four batteries, *viz.*, that on the eastern face of Kolaba Point just referred to, one on the Oyster Rock, one on Middle Ground, and one on Cross Island; each of these is marked by a brown circle on the accompanying Drawing No. 1. Whether any further defensive works are necessary is a matter to be determined by the military authorities.

I ought here to mention that, when at Bombay, I was impressed with the fact that there is an entire absence of floating basin accommodation in connection with the dockyard, and, as a necessary consequence, all gunboats and torpedo and other craft that cannot safely take the ground must, as matters are at present, either remain moored outside and the repairs be effected at additional expense and delay, or be hauled in and out again within a space of about two hours. It needs scarcely be remarked that this is not a satisfactory state of things at an establishment of such great importance, and on expressing my views on the subject to the Director of Marine, he concurred entirely with me in the advantages which would accrue from the provision of such accommodation.

This subject is beyond the scope of my instructions, but I have felt it necessary to call attention to it, and have indicated by green colour upon Drawings Nos. 3 and 4 the mode in which the needful accommodation might be provided. I am not now prepared to give even an approximate estimate of the cost of such a work, because this being, as I have stated, beyond my instruction, I did not feel warranted in authorizing the making of the sections and borings which would be necessary for that purpose.

I gladly embrace this opportunity of recording my best thanks which are due to Captain Hext, Captain Campbell, and Mr. Crocker, Constructor, for the assistance which they each and all so cordially and efficiently rendered during my inspection and investigations at Bombay.

No. 3756, dated 8th October 1886.

From—EVAN MACGREGOR, Esq., Secretary to the Admiralty,  
To—The Under-Secretary of State for India.

I am commanded by the Lords Commissioners of the Admiralty to request that you will have the goodness to convey to the Secretary of State for India in Council their thanks for the copy of Sir John Coode's report on the subject of provision of dry dock accommodation for ships of Her Majesty's Navy at Bombay, and the plans attached to it, which were transmitted for the consideration of their Lordships with your letter of 25th June 1886, P. W. 1018.

With reference to Sir John Coode's proposals, I am to make the following observations:—

1. That the position of the proposed dock is satisfactory, so far as facilities for docking are concerned, and the dimensions sufficient for naval purposes.
2. That the small wet dock suggested by Sir John Coode would be desirable, and it would also be a great advantage to have slips for hauling up torpedo boats, as well as sheds for their protection.
3. That the pier adjacent to the entrance of the dock should be widened and provided with a crane capable of lifting 80 tons, in order that a ship may lie alongside this pier to refit.
4. That the question as to the protection of the dock from an enemy's fire should be referred to the War Office.

Their Lordships propose to call for a report on this point from the Commander-in-Chief on the East Indian Station, but will not delay their reply to your communication pending the receipt of that report.

I am to add that their Lordships desire to urge the great importance of this dock upon the Secretary of State for India in Council, and to express their hope that it may be carried out as soon as possible.

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I do not think the construction of the proposed dock will call for any modification of the plans already approved for the defensive works of Bombay. It will come well within the area of protective fire, and will be, in fact, a portion of the dockyard which the batteries are designed to protect.

With regard to the wet dock for gun-boats, torpedo vessels, &c., the arrangement would be convenient, but I should not think it will prove essential, or, indeed, worth any large expenditure. The cost of slips for the torpedo boats has already been allowed for in the approved scheme for the Bombay floating defences. There will be only two gun-boats, which could, it is imagined, be provided for during the monsoons under the same arrangements as have hitherto sufficed for Her Majesty's ships or those of the Indian Marine. At any rate, if the cost is material, the provision of a wet dock should be postponed in favour of first class graving dock, which is of primary importance. The fact of its existence will be an inducement to the naval authorities to send first class ships of war to the Eastern waters, which, in its absence, they might not unnaturally be disinclined to do, especially if the Canal route were closed, as in time of war it might be expected to be. The presence of such vessels in Indian waters would have a value which can hardly be over-estimated, and in this view I think the cost of the dock would be money well invested.

ALLEN JOHNSON, *Major General,*  
*Military Secretary.*

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No. 14 P. W., dated 15th March 1887.

From—The Government of India,  
To—The Secretary of State for India.

We have the honour to acknowledge the receipt of Your Lordship's Despatch No. 57, Public Works, dated 2nd December 1886, and enclosures, regarding the construction of a dry dock in the Bombay Harbour suitable for the ships of Her Majesty's Navy.

2. Sir John Coode has, in accordance with his instructions, estimated for the construction of a dry dock capable of accommodating the largest type of vessel in Her Majesty's Navy at an estimated cost of £265,000, and has recommended the provision of additional floating basin accommodation for gunboats and torpedo boats, of which the cost has not been estimated. Your Lordship desires to be placed in possession of our views as to the measures which should be taken for carrying out Sir John Coode's proposals and to be furnished with carefully prepared estimates of the cost of the work.

3. We are fully sensible of the necessity of providing docking accommodation for ships of war in Indian waters; but a dock of the dimensions proposed would be practically useless to India, and, so far as the information now before us goes, it appears to be needlessly large for even the possible requirements of Her Majesty's Navy. The necessities of the case would be fully met if arrangements were made for docking the largest ships likely to be found in

Indian waters, on any day of the year and at high tide, and we believe that this can be done with a dock of considerably reduced dimensions. It would appear as if, in adopting the dimensions of the Malta Dock for Bombay, the advantage given by the tides in these waters had been overlooked.

4. The width adopted in the design for the entrance to the dock is 94 feet, and the vessel taken as the standard for fixing the dimensions is the *Inflexible*. This ship, we are advised, exceeds by 7 feet the breadth of any other vessel in the Navy, and this excess is further added to by a sponson on each side, making her total width about 85 feet across the sponsons. Excluding the *Inflexible*, we believe that there is no ship of more than 68 feet total width of beam; and for vessels of this width the breadth of entrance need not exceed 76 feet.

5. The length adopted in the design is 500 feet; but we are advised that a length of 450 feet would be sufficient for any iron-clad in the Royal Navy, and would be about 100 feet more than is required for vessels of the more recent types, and further, that if the reduced length of dock of 450 feet is adopted, the length of the guide pier may also be reduced from 600 to 500 feet.

6. The depth specified is 35 feet over sill at high water in ordinary neap tides. The deepest draft of vessel now taken through the Suez Canal is 24 feet 7 inches, and we are advised that after the proposed deepening the deepest draft that can pass will be about 26 feet. We shall, therefore, probably never get vessels at Bombay of more than 27 feet draft in their fully laden and intact condition; and even if such a vessel were injured and partially water-logged, the removal of her coal and stores might be expected to lighten her to 27 feet draft; we therefore conclude that if this depth is provided at high water neap tides sufficient provision will have been made. It may be remarked that owing to the set of the tide across the dock approach, vessels could only be safely docked at high water, and any provision for docking at half tide would be useless.

7. Apart from the reasons given above for considering the dimensions adopted in Sir John Coode's estimate to be excessive, it must be borne in mind that a dock of such dimensions would be practically useless to India except for the occasional and rare docking of an iron-clad. It could never be used for vessels of the Indian Marine, nor even for the largest merchant ships, except with the greatest possible inconvenience. The greatest breadth of any vessel now in the Indian Marine is 45 feet, and this is a much greater breadth than that usually found in merchant vessels frequenting the port, so that the shores for propping the vessels would have to be at least 35 to 40 feet long if the dock were built of the width adopted in the estimate. Such a dock would remain practically unused; further, the required depth in the approach channel could only be maintained by continuous dredging, which would add largely to the cost of upkeep and working expenses.

	Feet.
Length of floor . . . . .	450
Breadth of bottom . . . . .	68
„ at coping . . . . .	112
„ of entrance . . . . .	76
Depth over sill at high water spring tides . . . . .	30
Depth over sill at high water neap tides . . . . .	27
„ „ low water . . . . .	21
„ „ „ spring tides . . . . .	18

8. From a consideration of these points we are led to believe that a dock of the dimensions given on the margin will sufficiently meet all probable requirements, and we would recommend that the design should be cut down accordingly.

9. The provision of a wet dock adjacent to the yard is, in our opinion, a matter of importance. The working of the yard is much hampered by having no sea face where ships can be berthed for repairs; consequently vessels must either remain in dock until repairs are completed, or be moved to an anchorage in the harbour where, owing to the distance from the dockyard, work is more costly,

control is less efficient, and the provision of labour difficult. All these disadvantages would be obviated by the provision of a wet dock; but the arrangement plotted on the drawings is, we think, susceptible of improvement.

10. We have requested the Government of Bombay to cause the estimates for a dock of the dimensions noted in paragraph 8 of this Despatch, and for the necessary floating basin accommodation in connection with the yard, to be prepared with the least possible delay, and they will be forwarded to Your Lordship as early as may be practicable. We anticipate that the reduction of the dimensions will cause a saving of about one-third on the estimate prepared by Sir John Coode.

11. Your Lordship authorises us to take all preliminary steps in the meantime for the commencement of operations, but before we commit ourselves to the execution of even the smaller scheme recommended by us, we think it will be desirable that the source from whence the money is to be provided should be definitely settled. The Despatch under reply does not touch on this point; but in a letter to the Admiralty, No. P. W. 2324—84, dated 21st January 1885, which formed one of the accompaniments to Lord Kimberley's Despatch No. 19 P. W., dated 30th April 1885, it is stated that—

“the Secretary of State for India would be prepared to press upon the attention of the Government of India any proposals which might be put forward by the Admiralty with a view to the provision of dock accommodation which might be deemed of national importance, subject only to the consideration that no undue burden should thereby be thrown on the revenues of India.”

12. The works are designed not to serve the interests of India only, but for the protection of the commerce, alike of India and of the United Kingdom, and, whatever the cost may ultimately prove to be, we consider that an undue burden would be thrown on the revenues of India if the entire cost were met from that source. If the smaller dock is sanctioned, we shall be prepared, fol-

lowing the precedent of the Aden\* fortifications, to contribute one-half the cost of the entire scheme, including the wet dock accommodation; the remaining half ought, in our opinion, to be contributed by the British Government, and in this view we trust that we shall receive Your Lordship's support.

\* Despatch No. 84, dated 20th March 1884 (Military), from Secretary of State.

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No. 44 P. W., dated 12th August 1887.

From—The Government of India,

To—The Secretary of State for India.

On the 15th March last we addressed Your Lordship, in Despatch No. 14 P. W., on the subject of the dry dock which it is proposed to construct in the Bombay Harbour suitable for the ships of Her Majesty's Navy. We expressed the opinion that a dock of smaller dimensions than those which were proposed by Sir J. Coode would be sufficient. In reply we have received from Your Lordship the following telegram :—

“Bombay Dock. Your Public Works Despatch, 15th March last. Original dimensions recommended by Admiralty must be adhered to; and designs and estimates must be prepared at once; incidence of cost remains for decision; and result will be communicated to you.”

We have issued instructions for the preparation of designs and estimates of the dock as recommended by the Lords Commissioners of the Admiralty.

2. Since writing our Despatch of March last, our attention has been drawn to the statement of the First Lord of the Admiralty, explanatory of the Navy estimates of 1887-88, an extract from which is appended. In this, it will be seen

that reference is made to the policy of subsidising Companies to enable them to build docks abroad capable of accommodating men-of-war of large dimensions. Special mention is made of docks which have been constructed at different places under these conditions: among these the dry dock at Esquimaux occurs; and it may be inferred from the context that this dock is considered to be one which is suitable for Her Majesty's ships. We would also ask Your Lordship's attention to the enclosed Memorandum by Captain Hext, R. N., Director of Indian Marine, and to the following statistics comparing the Esquimaux dock with the proposals for Bombay:—

	Esquimaux dock.	Bombay dock as pro- posed by Government of India.	Bombay dock as re- commended by Lords of the Admir- alty.
	Feet.	Feet.	Feet.
Length of floor . . . . .	430	450	500
Width on coping inside . . . . .	90	112	126
Width on floor . . . . .	41	63	63
Width on coping at entrance . . . . .	69	76	94
Depth from coping to invert . . . . .	32½	35	43
Depth from coping to floor . . . . .	36½	38½	43½
Depth at high water low spring tides to invert	26½	30	38
Cost . . . . .	£160,000	£235,000	£265,000

The figures for the Esquimaux dock are taken from the *Army and Navy Gazette* and *The Engineer*. Those for the dock proposed by Sir John Coode are his own; but there seems reason to believe that they may be largely exceeded.

3. We have not yet received any statement of the reasons which have led to the conclusion that our proposals must be set aside and the larger dock constructed at Bombay. We have no doubt that we shall hear further from Your Lordship on this point; but meanwhile we desire to draw attention to the financial considerations which are involved. We gather from the telegram which is quoted in the first paragraph of this Despatch that the decision on the question of the incidence of the cost of this work may be reached without further reference to our Government; and that we may be compelled to accept a charge which will bear with undue hardship on the revenues of India. We cannot think that it would be right that those revenues should be compelled to bear any large proportion of the cost of a dock which, owing to its large size, would not be so useful for the general purposes of this country as one of smaller dimensions. If the larger dock is constructed, for reasons which cannot be accepted as applicable to the interests of India alone, we conceive that the proportion of the cost to be assessed against our revenues should be considerably less than one-half. It is quite unlikely that we shall be in a position to pay half even, £265,000, in addition to our present military burdens, out of current revenue.

*Extract from Statement of First Lord of the Admiralty in submitting Navy Estimates for 1887-88.*

#### GRAVING DOCKS ABROAD.

“The policy of subsidizing companies to build docks abroad capable of taking

in and repairing men-of-war of large dimensions has been favoured of late years by successive Boards of Admiralty, and considerable sums have in this manner been spent in past years. The dock at Esquimaux, thus assisted, will this year be open and ready for use; at Hongkong the final instalment for a similar purpose will this year be paid, and at Halifax arrangements have been made by which it is hoped like advantages will hereafter accrue on the completion of the dock.

\* \* \* \* \*

“The conditions under which Government assistance towards the construction of docks is given are that, when constructed, payment shall only be made for services or work rendered.”

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*Memorandum by CAPTAIN J. HEXT, R.N., dated 2nd February 1887.*

I have had under consideration the plans and report prepared by Sir John Coode for providing a dry dock at Bombay; and although with his usual ability the design is in every respect well conceived and worked out for a first class dock, I am of opinion that one of more moderate dimensions, as hereinafter detailed, will more nearly meet the requirements of Bombay, to say nothing of the greatly reduced first cost and subsequent charges for up-keep if the dimensions named by me are sufficient.

I do not gather from the correspondence that Sir John Coode favours strongly the provision of a first class dock. On the other hand, he appears to have framed an estimate for such a dock on the understanding that it was desired; but at the same time he points out, apparently with a view to directing attention thereto, that, “if a dock of less dimensions and diminished depth over sill should be deemed sufficient to meet the requirements, the expenditure would be reduced to a corresponding extent.”

One point of which no account seems to have been taken, or at least no reference is made to it in the correspondence, is this: of what use will such a dock be to India except for the occasional and rare docking of an iron-clad? It could never be used for marine vessels nor even for merchant ships, except with the greatest possible inconvenience, even for the largest of them. The broadest vessel now in the Marine is 45 feet, and this is a much greater breadth than that usually found in merchant vessels frequenting the port; so that the shores for propping the vessel would be from 35 to 40 feet long if the breadth of dock is as stated in the report. Thus for the bare possibility of such a dock being required in war time, or except for an annual docking, perhaps, of one of the largest iron-clads afloat, it would remain practically unused; and not only would a large piece of valuable ground be occupied unremuneratively, but the dredging of the approach to the depth stated must be continually going on, at some cost, to keep the channel free from silt, which it is more than probable will accumulate, especially when the extensive pier is formed by a continuation of the present breakwater. This question of up-keep and working expenses is one to which serious attention must be given, as the ordinary working expenses of the dockyard will be incapable of bearing the charges of maintaining the dock with such limited use. I would point out that the case stands differently in the Royal Dockyards, where their large dock is almost continuously occupied by one or other of the iron-clads, whereas at Bombay the use to which it would be put will be rare and uncertain.

One may predict as more than probable that the enemies of England will in case of war order one or more of their most powerful iron-clads through the canal, or to India by way of the Cape, with the full intention of compelling England to detach the same number of vessels from their Home or Mediterranean squadrons to prevent reprisals at our coast towns in India, or injury to our coaling stations; this renders it imperative that docking accommodation should be provided. But it is still open to question whether it is necessary that the dock should be so large as described in the report. I think all that need be considered is that it should be possible to dock the largest ships likely to be found in Indian waters on any day of the year and at high water; the question of docking at other time of tide is but of little importance, as it only means a few hours' delay.

I think it may be laid down that we shall never get vessels of more than 27 feet draft in their fully laden and intact condition; and if such a vessel were injured by one or more of her double-bottom compartments being open to the sea, the removal of her coal and stores may be expected to lighten her perhaps 2 feet or more, and thus provide for the increased draft due to her waterlogged condition; so that if a dock with 27 feet of water on the sill at high water neap-tides were provided, we shall, I consider, have gone sufficiently far in the direction of depth, taking into account how costly and unhandy such a large dock would be for general use. It will be observed that this draft has been laid down with reference to high water on a neap-tide, because the set of the tide across the dock approach (a deep cutting through silt) prevents docking except at slack water; and so practically it resolves itself into docking at high water; and as with an injured ship the means of control would generally be less effective in managing her, the danger from a cross tide would be augmented.

In regard to width, the vessel taken by Sir John Coode is the *Inflexible*; this ship exceeds by 7 feet the breadth of any other vessel in the Navy; and this excess is still further added to by a sponson on each side abreast her turrets, making her total width across sponsons about 85 feet. As the sponsons are not abreast each other, it would be possible to work the ship in through a breadth of entrance somewhat in excess of the breadth of ship and one sponson by keeping the masonry narrow in a longitudinal direction so as to angle the ship across the dock. However, with the ship of 85 feet it has been thought necessary to set out 94 feet as the entrance breadth; whereas I would submit that the smallest possible margin only need have been retained over that taken by the ship; the sponsons if bruised on coming into dock are excrescences of no structural importance, and being of thin plate iron can be readily repaired. I however go further and say that if the *Inflexible* be excluded, we have no ship of more than 63 feet beam, and these are without sponsons. The vessels of the *Admiral* and latter classes are but 68 feet beam against the 85 feet of the *Inflexible*. I think therefore we may well avoid providing for the single vessel referred to; we shall then be able to reduce the entrance from 94 feet, as designed to about 76 feet, which will give a clearance of 8 feet ample for the purpose. The breadth at coping will also be reduced (by taking the shallower dock and leaving the *Inflexible* out of the question) from 126 feet to 112 feet.

Again, I think 450 feet sufficient for the length of the dock; this will provide for any iron-clad in the Royal Navy, and is about 100 feet more than the more recent vessels require; in fact, none but our earlier iron-clads approach even the limit named: and if this be granted, the guide pier may be reduced from 600 feet to 500 feet.

The comparison therefore comes out as follows :—

	Sir John Coode's design.	Suggested modifica- tions.
	Feet.	Feet.
Length of floor from inside of caisson to head . . . . .	500	450
Breadth of bottom between altars . . . . .	63	63
Breadth at coping . . . . .	126	112
Breadth at entrance . . . . .	94	76
Depth over sill at high water, ordinary spring tides . . . . .	38	30
Depth over sill at high water, ordinary neap tides . . . . .	35	27
Depth over sill at low water, ordinary neap tides . . . . .	29	21
Depth over sill at low water, ordinary spring tides . . . . .	26	18

The reduction, more especially in the direction of depth, to the extent of 8 feet, as shown, will weigh considerably on the estimate of cost of dock and subsequent keeping open of the approach channel, the dredging and blasting of rock in which will be restricted to the 3-fathom contour line shown on Drawing No. 3, instead of being carried to near the  $4\frac{1}{2}$  fathom line, which is situated at the right-hand margin of the drawing. I shall not perhaps be far wrong in saying that the estimate of £265,000 will be reduced by one-third if the smaller dock be adopted; and the loss in docking power is scarcely appreciable in regard to the iron-clads, whilst it will be possible to use the dock for ordinary merchant ships and unarmoured vessels, whereas, as before stated, with the larger dock it will remain practically unused.

Secondly, with all due deference to the expression contained in Major-General Johnson's letter enclosed with the report as to the provision of a wet dock adjacent to the yard not being essential or worth any large expenditure, I desire to state that the working of the yard is much hampered by having no sea face where ships can be berthed for repairs. We have either to retain the vessels in dock until completed, or, if not requiring to be docked, they must lie off at anchor a mile or more distant in the harbour. The native workmen in the latter case are removed from efficient control by Europeans, and supervision can only be at a minimum; this adds to the cost and time taken for the repairs, necessitates the attendance of steam and other boats, shortens the hours of effective labour, and, moreover, during the south-west monsoon, prevents a large number of men from attending to their duty from timidity, when they know they are to be employed afloat; and, if prevailed on to attend, they are often rendered incapable by reason of sea-sickness. It is also necessary to pay some attention to their caste prejudices, which prevents them eating food on board-ship, a point of some importance when extra time over and above the ordinary hours is required of them.

All this would be obviated by the wet dock, but I do not think full advantage has been taken of the Custom House basin within which Sir John Coode has plotted a dock of  $2\frac{1}{2}$  acres extending only to the present dockyard boundary; whereas a more commodious basin would be formed by simply continuing the Duncan Dock wall across to the Customs pier head, giving the ground immediately at the edge of proposed wet dock, say, for a width of 60 feet on the wharf side for dockyard purposes, and dividing the Customs pier by a boarding along the middle lengthwise, so as to permit of the right of way and landing facilities now enjoyed by the public. The Customs work is however almost, if not quite, *nil* at this end of the town and the traffic is inconsiderable; the whole business is practically carried on at Prince's Dock.

The ground referred to, both wharf and pier, are already Government property, and all the substantial buildings are more remote from the quays than



the 60-foot line named. I think there could be but little objection to such a transfer of wharf when the manifest advantages arising from it are considered.

By such an arrangement a basin of 5 acres would be formed, giving room for three large vessels and several smaller ones to lie afloat locked in with a depth of water of 18 feet, say, over the entrance sill instead of 15 feet at high water neap tides, as suggested by Sir John Coode. The silt, &c., in the basin could be cleared out after the lock wall was built; and as the major portion of it is very soft and of recent deposit, no difficulty or great cost need be anticipated.

The site marked for the new position of patent slip appears unsuitable; the old boiler workshop cannot be given up; but the question is unimportant at present, because when the scheme for hauling up the torpedo boats contemplated for the Marine is taken up, the whole arrangement can be gone into, as a much larger space will be necessary for them, which will cause probably a revision of some of the buildings now in the Marine storekeeper's portion of the yard. It will be observed that I have taken occasion to point out and lay emphasis on the bearing the dock will have on the working expenses of the yard—a question to which considerable attention has lately been given. This view of the improbability of very large docks being remunerative was taken by the Bombay Port Trust authorities—*vide* their letter (a copy of which is enclosed)—to the Bombay Government, No. 2616, dated 14th July 1884, when acknowledging the receipt of a letter containing a suggestion made by the Lords Commissioners of the Admiralty that the Trustees should provide a graving dock suitable for the larger class of Her Majesty's ships; their Lordships indicating that some contribution might be made by the Imperial Government towards the cost of such a dock. In a letter to the Secretary of State, dated 10th March 1884, the Admiralty refuse to bear any part of the cost of a dock such as is now proposed; but, oddly enough, as it appears to me, they say, in paragraph 5, that "the objection to a share of it being contributed from the Naval estimates would not be so great in the case of a contribution to a Company as in that of a dock constructed by the Government of India; and the question is one which they would not be disposed to decline to consider." To subsidise a private Company and refuse to give it to a Government actually under the Crown seems, to say the least of it, odd.

I will conclude by saying that the dock I now propose is, in my opinion, all that is necessary, taking into consideration the requirements of India as well as those of the Admiralty.

I attach a tracing showing the comparison between the sections of proposed and modified dock.

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No. 57 P. W., dated 6th October 1887.

From—The Secretary of State for India,

To—The Government of India.

Your Excellency's Government will have learnt by my telegram of the

*Telegram to Viceroy, dated 20th June 1887.*  
 "Bombay Dock. Your Despatch, 15th March. Original dimensions recommended by Admiralty must be adhered to, and designs and estimates should be at once prepared. Incidence of cost remains for decision, and result will be communicated to you."

Admiralty, pending a reference to the Treasury as to the incidence of the cost.

20th June last, as marginally quoted, that it had been decided that designs and estimates for the proposed dry dock at Bombay should be prepared according to the dimensions recommended by the

2. I now forward, for Your Excellency's information, copies of the correspondence\* which has passed with the Admiralty and the Treasury, which I regret to say has not led to a satisfactory result, the Lords Commissioners of the Treasury having replied that they were of opinion that the circumstances would not justify them in asking Parliament to make any contribution.

3. The subject will be further considered, with a view to obtaining a settlement more in accordance with the wishes of Your Excellency's Government, and I shall address you again hereafter, as soon as I am in a position to come to a final conclusion regarding it.

4. Meanwhile, it will be desirable to prepare a modified design and estimate according to the reduced dimensions which have been proposed by your Government.

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No. 628 P. W., dated 21st April 1887.

From—J. A. GODLEY, Esq., Under-Secretary of State for India,  
To—The Secretary to the Admiralty.

With reference to the correspondence which took place between the Admiralty and this Office in October of last year, regarding the provision of dry dock accommodation for ships of Her Majesty's Navy at Bombay, I am directed by the Secretary of State for India in Council to forward herewith, for the information of the Lords Commissioners of the Admiralty, copy of a Despatch which has been received from the Government of India with regard to the dock proposed by Sir John Coode.

It will be seen that the Government of India, while fully sensible of the necessity of providing docking accommodation for ships of war in Indian waters, are of opinion that a dock of considerably smaller dimensions than those recommended by Sir J. Coode would fully meet the necessities of the case, and that they desire to reduce the length from 500 to 450 feet, and the breadth and depth in proportion.

As the Lords Commissioners of the Admiralty have expressed their satisfaction with the size originally proposed for the dock, Viscount Cross requests that the views and recommendations of the Government of India now communicated may receive their Lordships' consideration, and that they will favour him as speedily as possible with their opinion on the question at issue.

I am to add that it is of very great importance that the cost of this work shall be kept down to the least amount that will give the accommodation strictly necessary for the objects in view, and that the Government of India, being now engaged on other very large projects of a defensive character, objects strongly to any burden being thrown on the revenues of India that can be avoided. Viscount Cross entirely concurs in this view, and requests that if the dimensions suggested by the Government of India do not appear to the Lords Commissioners to be sufficiently large, their Lordships will cause him to be furnished with a full statement of the reasons why the opinion of the Indian Government in a matter in which they are primarily concerned cannot be accepted.

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No. 4038, dated 27th May 1887.

From—EVAN MACGREGOR, Esq., Secretary to the Admiralty,  
To—The Under-Secretary of State for India.

I am commanded by the Lords Commissioners of the Admiralty to acquaint

you, for the information of the Secretary of State for India, that they have carefully considered your letter of the 21st April 1887, and the Memorandum therein enclosed, dated 15th March, from the Government of India, and have come to the following conclusions—

1. They consider that the proposed graving dock at Bombay should be of the dimensions laid down in Admiralty letter to the India Office of the 30th March 1885, *viz.*:—

	Feet.
Length from stem to head at broad altar . . . . .	500
Width of entrance at coping . . . . .	94
Depth over sill at the lowest high water (if possible) . . . . .	30

In laying down these dimensions the tidal conditions of Bombay were not forgotten, and it was well known at the Admiralty that ships passing through the Suez Canal, even after it is deepened, will not draw more than 27 feet of water.

The depth of 30 feet was, however, suggested because the dock might be required to receive an iron-clad (and without delay) which, though ordinarily drawing only 27 feet, had been so water-logged, either by being struck in action or from other causes, as to draw considerably more.

A depth of 30 feet on the sill, or on the top of the blocks, where this is not flush with the sill, is therefore the least that can safely be given, but a depth of 35 feet (on the sill, equivalent to from 31 to 32 feet on the blocks), as proposed by Sir John Coode, would be better, as it would suffice for a ship in a still more distressed condition.

2. My Lords consider that the dock should have an effective width of entrance of at least 90 feet, and be capable of receiving H. M. S. *Inflexible*, and I am to point out that, though that ship is at present exceptional in her beam, there are other recent iron-clads which closely approach her in this respect, *e.g.*, the *Victoria* and *Sanspareil* are 70 feet broad, the *Trafalgar* and *Nile* 73 feet broad, the *Admiral* class (largest) 68½ feet broad.

With regard to the length of 500 feet proposed, it is true that this is not required for any iron-clad now existing, but a dock of even greater length than this will be necessary to accommodate the merchant cruisers that will be employed during war. It is possible that the present Government and commercial docks may be available to some extent for vessels of this class, but it is doubtful whether they have a sufficient depth of water over their sills, for the first-class steamers of the present day require a depth on sill of 20 or 21 feet.

If, however, the present local docks are capable of taking in merchant steamers of this class, the new graving dock might be made only 450 feet long, as proposed by the Government of India. In that case, however, my Lords would suggest that room should be left so that it may be lengthened, if at any future time the dimensions of the ships of war of the day should require it.

With reference to the last paragraph of your letter, I am to add, in conclusion, that my Lords feel sure that the interests of the Indian Government, as well as those of Her Majesty's Navy, will be best served by the construction of a graving dock at Bombay, which will be capable of taking in the largest iron-clads, even under circumstances of distress, either in peace or war, and having this object in view, they are unable to concur that the dimensions proposed by Sir John Coode are in any way excessive.

No. 993 P. W., dated 29th June 1887.

From—JOHN E. GORST, Esq., Under-Secretary of State for India,  
To—The Secretary to the Treasury.

With reference to the question of the provision of a dry dock at Bombay for the accommodation of vessels of Her Majesty's Navy, I am directed by the Secretary of State for India in Council to inform you that the Government of India have had under their consideration the plan for a dock of the description which was proposed by Sir John Coode, and approved by the Lords Commissioners of the Admiralty in October 1886. The estimated cost of the same was 265,000*l.*, exclusive of the floating basin accommodation for gunboats and torpedo boats, which the Lords Commissioners of the Admiralty considered would be of great advantage. The Government of India are of opinion, however, that a dock of the size proposed would be practically useless to India, and that a smaller and less costly one would be sufficient for the requirements of the case. They calculate that the reduction of the dimensions would cause a saving of about one-third on Sir John Coode's estimate.

Upon receipt of these views Lord Cross caused the accompanying letter\* to be addressed to the Lords Commissioners of the Admiralty, and I am directed to forward herewith their Lordships' reply, by which it will be seen that they still continue of opinion that the dimensions originally proposed are not excessive.

I am further desired to state, for the information of the Lords Commissioners of Her Majesty's Treasury, that the Government of India are of opinion that an undue burden would be thrown on the revenues of India if the entire cost of the undertaking were met from that source. "The works," they contend, "are designed, not to serve the interests of India only, but for the protection of the commerce alike of India and of the United Kingdom," and they trust that the same arrangement as was made with regard to the Aden fortification may be applied to this work, *viz.*, the division of the cost equally between Her Majesty's Government and the Government of India.

It appears to the Secretary of State for India in Council that the arguments used by the Government of India deserve the most serious attention of Her Majesty's Government. It has been acknowledged by successive Governments that the matter is one of "national importance," and it is fully recognised in the letter from the Admiralty of 27th April that the dock in question is required in the interests of Her Majesty's Navy serving in the whole of the Eastern seas, which extend to Ceylon, the Straits Settlements, China, and Australia, as well as the coasts of India, and consequently in the interests of all that portion of British commerce which passes through those seas, and which has of late grown to such vast magnitude.

The view now taken by their Lordships as to the dimensions of the proposed dock, while supported by sufficiently cogent reasons to justify its adoption, does not tend to alter the opinion which has been taken by the Indian authorities as to the incidence of its cost.

Viscount Cross feels it to be his duty, therefore, earnestly to press the matter upon the consideration of the Lords Commissioners of Her Majesty's Treasury, with every confidence that, after viewing the case in all its aspects, and bearing in mind the very heavy expenditure which the revenues of India have been recently called on to bear on account of the increased military precautions required upon the North-West Frontier of that country, they will agree with him that it is only reasonable and just that this country should share with India the cost of a work which is required equally for the service of both countries.

No. 12364, dated 19th August 1887.

From—R. E. WELBY, Esq., Secretary to the Treasury,

To—The Under-Secretary of State for India.

The Lords Commissioners of Her Majesty's Treasury request you to inform the Secretary of State for India in Council that they have been in communication with the Board of Admiralty respecting the contribution towards a dry dock at Bombay proposed in your letter of the 29th June last, and that, after full consideration, they have come to the conclusion that the circumstances would not justify them in asking Parliament to make any contribution.

The Indian Government press for a contribution on the ground that the dock is designed, not to serve the interests of India only, but for the protection of the commerce alike of India and of the United Kingdom. But my Lords need hardly say that the acceptance of such a principle as the basis of contribution would lead to demands upon India in respect of many works at Home and in the Colonies which are now paid for out of Imperial or Colonial funds.

Of course, if India bears the whole cost of the Bombay docks, the Indian Government must determine the amount of expenditure to be incurred, and therefore the dimensions of the dock; but their Lordships may remark that the requirements of Indian commerce, in the form of dock accommodation, would seem to include the means of docking the vessels of war employed for its protection.

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No. 67 P. W., dated 31st October 1887.

From—The Government of India,

To—The Secretary of State for India.

In our Despatch No. 14 (Public Works) of the 15th March, and again in our Despatch No. 44 (Public Works) of the 12th August last, we addressed Your Lordship on the subject of the dry dock which it is proposed to construct at Bombay for the ships of Her Majesty's Navy. In the latter Despatch we stated that the designs and estimates for the dock recommended by the Lords Commissioners of the Admiralty were under preparation.

2. We now forward a report by Mr. Ormiston, the Engineer to the Bombay Port Trust, on the subject of Sir John Coode's scheme for this dock. The report is accompanied by four plans which are also enclosed. We would ask the special attention of Your Lordship to the objections raised by Mr. Ormiston to the scheme of Sir John Coode. We think that all these, and particularly the objections raised to the entrance channels, have great weight. We entirely concur in Mr. Ormiston's opinion.

3. It will be seen that the estimated cost of the dry dock proposed by Mr. Ormiston, together with the wet dock close to it, is 37 lakhs of rupees, of which the wet dock absorbs 12 lakhs.

4. We have further to present, for Your Lordship's consideration, another project which has been submitted to us. This is a proposal made by Captain Hext, the Director of the Indian Marine, to enlarge and adapt the existing "Duncan" docks in the Bombay Dockyard. A letter from Captain Hext (No. 37 T. S. of the 7th instant), together with the tracing which accompanied it, is enclosed.

5. The dimensions of the various proposals may be compared thus :—

	Project of the Lords of the Admiralty for a dry dock only.	Captain Hext's "Duncan Dock" project.	Mr. Ormiston's project which includes a wet dock.
	Ft. in.	Ft. in.	Ft. in.
Length . . . . .	500 0	560 0	500 0
Extreme width . . . . .	126 0	68 0	108 0
Width on floor . . . . .	63 0	47 9	61 0
Depth over sill at high water ordinary spring tides . . . . .	38 0	24 6	30 3
Cost . . . . .	£265,000 =R35,30,000 at 1s. 6d.	R6,25,000	R37,00,000

6 The difference in cost in favour of the "Duncan" dock project is so great that on this ground alone the project commands attention. We are of opinion that for all practical purposes this project would satisfy all requirements, and we commend it to the consideration of Your Lordship and of the Lords Commissioners of Her Majesty's Navy.

Dated 16th September 1887.

From—GEO. E. ORMISTON, Esq., M. Ins. C. E., Engineer to the Bombay Port Trust,

To—The Secretary to the Government of Bombay, P. W. Department.

With reference to your No. 778B. of 28th July, I have the honour to submit the following report on the points therein mentioned.

The design of dock submitted with Sir John Coode's report is, as he states, almost exactly similar to the new dock at Malta now under construction.

The new Malta Dock is the outcome of the special conditions to be dealt with at Malta, and these are an almost total absence of tides, of powerful currents, and of expenditure for maintaining the channel of approach. It is therefore possible at Malta to have a dock which will enable a heavy ship to be docked at any state of the tide. But with a range of tide such as obtains in Bombay Harbour (16' 8" at springs) and correspondingly swift currents, it would be found impracticable to dock vessels through a cut across the tide, the more so if injured and less manageable except at slack water, and as Captain Hext justly observes, this practically resolves itself into docking at high water. If this is conceded—and I venture to think it must be—the construction and maintenance of a dock and channel of approach of the size and depth contemplated by Sir John Coode will entail an expenditure for which neither benefit nor return of any kind can be obtained.

The long projecting pier is an objectionable feature if it can be disposed of. Its principal object is to steady a vessel before entering the dock. It is also to be utilized as a refitting wharf, and for this purpose it would be very valuable, but in this harbour it is always found that any projections pointing up the harbour form silt traps, and the longer the arms the greater is the quantity of silt deposited. A dolphin consisting of an isolated pier would catch the

silt less and would answer the purpose of guiding the ship into dock, but it would be of use for these purposes only. Taking into consideration the usefulness of the pier for refitting purposes, it may be considered desirable to retain this feature : if that be so, it only remains to make it as short as possible, and this can be done and a good berth still maintained by building the dock further to the westward ; the length of pier could then be cut down by nearly one-half and its objectionable effects reduced by the same amount. This arrangement I have shown on the drawings accompanying this report marked A and B.

As to the channel of approach I am convinced that its maintenance except at immense cost may be considered practically an impossibility. To make it by no means a serious work. With a dredger of the power of the Port Trustees' dredger *Teredo* and three hopper barges the mud and clay could be cleared away in from 15 to 18 months. This must be done before the removal of the rock could be commenced. There is a very large quantity of moorum and rock which can only be removed by blasting, and this sort of work when done under water is an expensive and slow business. In this harbour the cost reaches R75 per brass of 100 cubic feet of rock, and I do not think it could be done at the dockyard site for less money. It would take one and half years to remove the mud and clay, and as the weather will not permit boring and blasting in the monsoon, the removal of the rock and hard material would probably take three and half to four years, altogether say five to five and half years to complete the channel.

The cost of making this channel would probably be R7,75,000.

Even were it possible to complete this channel at less cost and earlier than I have estimated, its maintenance will entail a large annual expenditure.

Sir John Coode states that as the depth immediately seaward of the present entrance is so well maintained, it augurs well for the continuation of the improved depth in the proposed channel when executed. I do not think the circumstances warrant any great expectation from this source.

The unusual depth to seaward referred to is caused by the ebb tide swinging round the flag staff shoal, but the whole of this deep portion is thickly covered with fine silt equal in softness to that which silts up all channels or depressions dredged across the foreshore. This silt is light and easily stirred up, and therefore I conclude that it would not be found in such a place if the currents had sufficient strength to remove it. It would therefore be fair to argue that if the currents were strong enough to keep an artificial channel clear, the accumulation of silt lying at present within the scope of the currents could not exist.

The proposed channel has a remarkable resemblance to the channel dredged across the foreshore leading to the Prince's Dock, and what takes place in the latter might be fairly expected in the former.

The accompanying sketch C shows to one and the same scale the present Prince's Dock cut, Sir John Coode's proposed cut, also the cut proposed by Captain Hext, together with the respective levels of the foreshore and the bottoms of the present and proposed cuts.

The general level of the bottom of the harbour through which the Prince's Dock channel is cut is as much above the bottom of the harbour opposite the Dockyard as the bottom of the Prince's Dock cut is above the bottom of Sir J. Coode's proposed cut.

Experience shows that silt is deposited mostly in the monsoon, and it is not

usual to get a deposit of 18 inches or more in one month and an average depth through the year of about 5 feet.

As the dredging plant on account of the high sea would not be able to work during the early months of the monsoon, the full depth of the proposed channel during this period never would be available.

To keep the Prince's Dock channel clear and fit for traffic requires the removal of nearly 500,000 tons of silt every year at a cost of ₹67,500. As the proposed cut is more than double the area and very much deeper at the west or shore end, at least ₹1,50,000 would be required for the annual clearing. This and the removal from time to time of the silt catching in the neck of the channel would require the services of more than one dredger, and considering the upkeep of these throughout the year, Government must be prepared for an expenditure for maintenance of the proposed channel of not less than, say, ₹1,75,000 to ₹2,00,000 per annum.

I consider two dredgers and their attendant barges would be required, for this reason that if it takes annually four months' dredging to clear out the Prince's Dock channel, it would thus take rather more than double for the proposed deep cut, as unless such an amount of dredging power was brought to bear, no sooner would the channel be cleared out than the monsoon and the consequent heavy silting would be on again.

Dredging plant of double the capacity of that belonging to the Trustees would consist of two dredgers and six hopper barges, and the cost would be 12 lakhs.

With this dredging power the channel might be cleared of the monsoon silt in four months, but even with all this plant I do not feel satisfied that the channel would ever be quite satisfactory.

I observe Sir J. Coode proposes to use a ship-shaped caisson for closing the entrance to the graving dock. I would venture to point out that this shape is most difficult to handle in stormy weather, and I therefore recommend a sliding caisson which would always be under control. It would cost more, but its handiness would well repay the extra cost.

On the tracings hereto attached I have shown a graving dock practically of the size suggested by Captain Hext. I have made a few alterations principally in the shape of entrance and length of dock which I believe met with his approval. The depth on sill is such that there will never be less than 27 feet of water on the sill, at least one high water in any day of the year with the exception of 7 or 8 days in the monsoon (July, August, and September), when neither of the daily tides reach by a few inches this height. The level of this sill will be at 56'00 on T. H. Datum. The width of entrance should be 80 feet, and length of dock 500 feet, breadth of dock at coping 108 feet, and the clear width on floor between altars 61 feet. A section of this dock is attached. It will be seen that I have placed the steps leading down to the dock well back. The object of this is to enable steam cranes to be placed on rails close to copings of dock. A couple of such cranes would be very useful to assist in handling of the heavy shores required by large vessels, and helping in confined spaces where the want of physique in the workmen cannot be made up by numbers.

I attach a comparison of Captain Hext's proposed dock with two docks belonging to private companies subventioned by the Admiralty to induce the proprietors to build them large enough—said to be—to take in the largest ships in Her Majesty's Navy.



	Captain Hext.	Kowloon (Hongkong).	Esquimault.
Length inside . . . . .	500	500	430
Width at copings . . . . .	108	128	90
Do. at floor . . . . .	61	66	41
Depth on sill at high water ordinary spring tides . . . . .	30½	29	27
Depth on sill at high water ordinary neaps .	27½	?	?
Entrance {	width at coping . . . .	80	86
	do. at inverts . . . .	75	70
			65

It will be seen that the proposed dock is better than either in the most important respects, *i.e.*, depth on sill and width of entrance at sill level. The *Ajax* and *Agamemnon* require 66 feet at this level, and as Captain Hext's dock gives 75, there is ample room for docking vessels of this type.

The making and maintenance of a channel to this dock is quite feasible and at a moderate cost. The area which will be occupied by the channel is tinted yellow on plan B.

The removal of the mud and clay will occupy nearly two months, and the removal of the rock 15 months, including a monsoon. The whole of the rock would be removed and the channel complete and ready by the time the dock is ready. It could be done in this way.

The entrance works would be first taken in hand and the entrance completed and caisson fixed in place; the water would then be admitted against the caisson and cofferdam removed and the remaining rock beneath the cofferdam excavated, while the remainder of the dock was in progress.

The probable accumulation of silt in the monsoon could be removed in about a month, but there will be a constant accumulation of silt in the neck which will require cleaning out from time to time. This will be of course nothing in comparison to the amount of silt which would gather in the proposed deep cut.

The cost to make this channel will be R2,50,000, and to maintain R20,000 per annum, with an additional amount for working during the rest of the year: depending on the frequency of the neck requiring cleaning, probably R10,000 would suffice.

Referring to the small refilling basin, as shown by a green tint on Sir John Coode's plans, even although Captain Hext considers it too small, yet the whole of the north wharf is shown on ground the property of the Bombay Port Trust.

Coincident with the growth of the docks farther up the harbour, the trade in this basin has very much fallen off, and less space will now suffice. I have no doubt the Government could effect an exchange for the portion of the Custom house basin required for Government purposes with the Port Trustees for Government land elsewhere. I have shown on tracing a basin which would contain an area of  $4\frac{1}{2}$  acres, and also leave, as I believe, sufficient basin room for the present and prospective requirements of the trade. The Custom house pier will require to be demolished; it cannot be utilized in the proposed works as it stands even if its direction were suited to the new arrangements by

reason of its dilapidated condition and also owing to the walls being founded considerably above the level required for the new basin walls. The latter difficulty applies also to the other walls, and I have framed the estimate to include the removal of the walls and all fresh work as shown by red lines. I have also shown a sliding caisson as an entrance instead of gates. This is a more expensive arrangement, but it also acts as a bridge, and in this way would not only be cheaper than gates *cum* bridge but is also less in the way and better fitted to withstand the monsoon waves, which are at this place sometimes very high.

I have worked out an approximate estimate for the modified scheme herein described, which includes dock, channel, caisson, pumping engines, wing wall and guide, pier culverts, sliding caisson, pumps, engines, and all the necessary fittings and appliances, to complete the work for Rs24,00,000. This includes 10 per cent. for contingencies.

The cost of the refitting basin or wet dock together with channel dredged to one foot below sill level, the sill to be placed at the level required by Captain Hext, *viz*, 18 feet under high water neap tides.

The bottom of basin would also be excavated to 2 feet below sill to allow of a certain accumulation of silt which would be removed from time to time before it rose high enough to interfere with the working of the entrance.

I estimate the basin, including caisson, bollards, walls, excavations, entrances, and cofferdam, at Rs12,00,000. This includes 10 per cent. for contingencies.

Another lakh should be provided for the hydraulic engine and capstans so necessary for working such a large dock. These appliances were not specially mentioned and are therefore probably not included in Sir J. Coode's estimate.

As to the locality selected, none better on this side of the harbour exists. Of course Hog Island on the eastern side of the harbour possesses all the qualifications of a splendid site for a great naval arsenal and dépôt, but unless it is the intention of Government to create such a place the dockyard is clearly the best site for the proposed graving dock.

I may mention here that the level of sill of the proposed graving dock is the same as the level of sill of the entrance to the Port Trustees' new dock now approaching completion.

This report is accompanied by four plans marked A, B, C, D; the three first are referred to in the report. D gives a comparison of Sir John Coode's proposed channel, Captain Hext's proposed channel, and the Prince's Dock channel.

Government Resolution, Marine Department, No. 199, dated 18th May 1885.

Secretary of State's Despatch, Public Works, No. 57, dated 2nd December 1886, with three enclosures.

(Minute by Sir John Coode Admiralty's No. D. W. 3756, and Memorandum by General Johnson.)

Four Plans.

The enclosures and plans forwarded with your letter under reply, as noted on margin, are herewith returned.

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No. 37 T.S., dated 7th October 1887.

From—CAPTAIN J. HEXT, R.N., Director of the Indian Marine,

To—The Secretary to the Government of India, Marine Department.

I venture to lay before the Government of India a proposal for deepening and widening the present Duncan Docks at Bombay, which I think might pos-

sibly save a large proportion of the estimated sum for construction of the new dry dock, and even if, hereafter, the proposed dock is insisted on, will render expenses of docking ordinary vessels much less, inasmuch as the deepened Duncan Dock will take any ship that the Admiralty are likely, as far as can be judged by their action up to date, to send to the East Indies. My proposal is simply to deepen the existing dock six feet and remove the lower altar or offset. This would put the dimensions of the dock as follows:—

Length (extreme) 560 feet, on blocks, breadth (extreme) 68 feet, depth over sill high water ordinary spring tide 24 feet 6 inches, breadth at bottom 47 feet 9 inches, breadth on blocks 49 feet.

2. This would enable a ship drawing 22 feet, and in cases of emergency up to 25 feet, to be locked at extraordinary spring tides during any month of the year. It will be seen from the enclosed letter from Messrs. Kirby & Co, the contractors who are now engaged on the great extension works to the Prince's Dock, that they estimate the total cost at  $5\frac{1}{2}$  lakhs, and to this must be added 1 lakh for contingent expenses, such as alterations to pumping engine, if required, and the cost of deepening the existing channel,—this last, as a new dredger must in any case be ordered from home, need not be taken into account, as it would be part of the dredger's current work. By judicious arrangement I apprehend Government would only lose the use of one of the docks (the Duncan is a long dock divided by a caisson) for one cold season, and for this time in cases where I could not by lightening the vessels get them into the Bombay dock, an arrangement could be made with the Peninsular and Oriental Company for docking such ships as were required. It will be seen by the sketch attached that the new class of steel protected cruiser, first class, of which the *Thames* is one, can get into this dock, as also the *Leander* class (steel 2nd class steam cruiser). On these two types of vessels defence of commerce and protection of foreign ports will most probably depend; both the above are of new design; besides, the *Invincible*, *Iron Duke*, *Audacious*, *Shah*, and *Rupert* could also be docked, and the Indian troopships, without lightening. This list includes the iron-clads hitherto sent to the China Station as flagships, and as long as the present maximum draught allowed through the Suez Canal, viz., 24' 7", is maintained, practically permits any vessel likely to be sent to Indian waters to be docked. Some of the ships mentioned may require lightening, but not to any very great extent.

3. I submit that if India had a dock capable of holding the vessels of the classes enumerated above, that she would be in a position to say to any demand from home for a huge dock of a size which would seldom or never be used (certainly not once a year, in the event of this proposal being approved), that until the Admiralty actually specified the size of the vessel they intended sending, and proved she could go through the Suez Canal, they saw no cause for going to such an enormous expense as that proposed by Sir John Coode. Another point should not be lost sight of, and that is that an actual return may be looked for, as heavy draught merchant ships of great length would use the dock without interfering with private enterprise, as none of the existing docks in Bombay can take them in.

4. Sir John Coode's dock is estimated at £265,000, or at Government rate of exchange, ₹35,33,330. This is  $6\frac{1}{2}$  lakhs, and this dock will be a workable dock for all our own vessels, and also for any Royal Navy ships hitherto sent

to the East (with, I think, one exception, the *Agamemnon*), against an unworkable dock except for large iron-clads, which I maintain are unlikely ever to come to Indian waters. In any case I am sure that the money will be well spent.

5. I propose submitting detailed plans directly I arrive in Bombay, about the 21st October, which will show the dimensions more fully. I cannot add them now, as they must be prepared on the spot under my supervision.

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Dated 22nd September 1887.

From—JOHN FLEMING, Esq., Bombay,

To—The Director of the Indian Marine.

As directed, a trial pit has been sunk at the back of the south wall of the Duncan Dock, as per tracing enclosed.

You will observe that the dock walls descend perpendicularly to a depth of 12' 8", at which level very heavy masses of basaltic rock, with a little moorum in the interstices, were met with and the wall is set in 2' to clear the rock.

At 2' 6" lower it is again set in 1' 6". At 19' 1" from the coping level solid rock was reached, when it appeared needless to carry the exploration further.

At this level you notice the wall is 7' 6" in thickness, and it is probable that it is carried down to the bottom of this thickness. Mr. Sharp and I have carefully considered the matter and anticipate no serious difficulty in widening the dock as proposed, by removing the lowest offset and in deepening to the extent of six feet.

The work must be done with care, and in short lengths, and will therefore need time, but we are confident it can be completed in two working dry seasons.

Assuming the masonry to be of the same class as that of the existing dock, we roughly estimate that four lakhs of rupees should fully meet the cost of throwing a sound dam across the entrance, of widening and deepening the dock, and providing all necessary masonry; but this sum will not cover the cost of caisson and gates.

We have not gone closely into the question of cost of these, but taking the cost of the caisson provided by the Port Trustees for the communication passage between the Prince's Dock and the extension as a guide, a lakh and a quarter of rupees should cover the cost of two caissons. If made of teak timber it should be somewhat less.

We have not quite made up the statement of expenses in connection with digging and refilling the trial pit, but they will not exceed Rs75.

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No. 35 (Public Works), dated 8th June 1888.

From—The Government of India,

To—The Secretary of State for India.

Adverting to our Public Works Despatch No. 8, dated the 31st January

1888, we have the honour to report that the Port Commissioners of Bombay have decided to build a graving dock, opening out of Prince's dock, of the following dimensions :—

	Feet.
Length . . . . .	550
Width of entrance . . . . .	66
„ dock bottom . . . . .	70
„ „ top . . . . .	90
Depth on sill ordinary springs . . . . .	26
The floor of the dock to be 2 feet lower than the sill.	

The Trustees have called upon their Engineer to prepare the necessary plans and estimates.

2. We report this matter in order that Your Lordship may be in a position to give the Lords Commissioners of the Admiralty information concerning the accommodation which may possibly be available in Bombay for the ships of Her Majesty's Navy.

No. 48 (Public Works), dated 13th July 1888.

From—The Government of India,  
To—The Secretary of State for India.

In the second paragraph of our Despatch No. 8 Public Works of the 31st of January last, we informed Your Lordship that arrangements had been made to

SIR JOHN COODE'S DOCK.		Feet.
Clear length . . . . .	:	500
Breadth at floor level . . . . .	:	63
Depth over sill, high-water spring tide . . . . .	:	33
Ditto low-water ditto . . . . .	:	26

prepare plans and estimates of the dry-dock at Bombay of the dimensions noted in the margin, as proposed by Sir John Coode in his letter No. 1018 of 11th June 1886 to the Under-Secretary of State for

India for ships of Her Majesty's Navy. We now forward these plans and estimates which have been prepared by Captain Olivier, R.E., with the advice and assistance of Mr. George Ormiston, the Engineer of the Bombay Port Trust.

2. On the 31st October last, we forwarded with our Despatch No. 67 Public Works a report by Mr. Ormiston, which dealt with this question of a dry-dock. We would invite Your Lordship's attention to Mr. Ormiston's objections to the proposed entrance channel as given in that report. These are substantially repeated in the report which is attached to the estimate now sent, and we would again suggest that they merit the serious consideration of the professional advisers of Her Majesty's Government on this question. In that same Despatch a proposal with reference to the Duncan Dock in the Bombay Dockyard was forwarded for Your Lordship's consideration.

3. We have already reported in our Despatch No. 35 Public Works, dated

PORT TRUSTEES' DOCK.		Feet.
* Length . . . . .	:	550
Width at entrance . . . . .	:	66
Depth over sill, ordinary springs . . . . .	:	26
† No. 14 Public Works, dated 15th March 1887.		
No. 44 Public Works, dated 12th August 1887.		
DUNCAN DOCK.		Feet.
‡ Length . . . . .	:	560
Breadth at floor level . . . . .	:	47
Depth over sill, ordinary springs . . . . .	:	24½

8th June 1888, that the Trustees of the Port of Bombay intend to construct a dry-dock of the dimensions noted in the margin\* connected with the Prince's Dock. In the earlier Despatches marginally noted,† we reported the dimensions‡ obtainable by deepening the Duncan Dock, which seem to us all that is necessary for the ships of Her Majesty's

Navy, and the estimated cost of which project amounts to £6,25,000. So that

Your Lordship is now in possession of all the information on this subject which it is in our power to afford.

4. With reference to the estimate which is now forwarded, we would remark that the total of Rs36,41,042 is for "Works" alone, and is exclusive of charges for Tools and Plant and Establishment. In a special case of this kind, these charges might possibly not exceed  $12\frac{1}{2}$  per cent. If so, the ultimate cost of the dock might be about 41 lakhs of rupees, or say £275,000.

5. Captain Olivier is at present in England on leave, and should Your Lordship consider it necessary, he might be placed on duty in connection with this project.

6. We desire, in conclusion, to record our opinion that if the Port Trust carry out the scheme which was described in our Despatch No. 35 Public Works, dated 8th June 1888, it cannot be necessary for our Government to build another dock in addition, at a cost which can be very ill afforded at the present time, if indeed the money could be found at all. If, however, it is decided to carry out Sir John Coode's scheme in spite of its great initial expense, and the still more formidable cost of annual clearance of the channel, we trust that full attention will be paid to our protest as to the incidence of the expenditure. We have not been informed of the result of Your Lordship's latest communications with the Treasury on the question of an Imperial contribution towards the expenditure; but we adhere to our opinion that India ought not to be required to bear the entire cost of a work the magnitude of which is measured by the demand of the Admiralty, and not by the necessities arising from the purely Indian aspects of the case.

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**Enclosure Nos. 1 and 2 to Public Works Despatch No. 48 of 1888.**

**Report by Captain HENRY D. OLIVIER, R.E., Executive Engineer, Military Works.**

The want of a graving dock in Bombay induced Government in 1886 to obtain the services of Sir John Coode with a view to designing the same. His report with certain plans, indicating the site of the dock, has been submitted to Government; and on the lines of these plans, I was ordered in February of the present year to draw out detailed plans and estimates, which I have the honour now to submit. In doing this I have worked as much as possible on the lines of the present graving dock at Malta, supplementing the same by some details in accordance with the advice of Mr. Ormiston, Executive Engineer, Port Trust, and adapting the whole to fit the locality, the nature of the site, and the description of stone most easily obtained.

On Sir John Coode's report Mr. Ormiston had the honour to submit a second report, in which he disagrees therewith on several points.

The two chief of these points were the nature of the closing caisson and the extent of channel to be excavated.

As regards the first of these points, Sir John Coode bases his reasons for using a floating caisson on the advantages gained for cleaning and examining the same if it be damaged by "pitting." Mr. Ormiston, on the other hand, points out that in a tide way and a harbour like Bombay, where the weather is at times very boisterous, a floating caisson will be apt to become unmanageable.

The dock at Malta is fitted with a sliding caisson, and I am inclined to

think that this description of caisson would be better suited to the present case. Though if the mouth of the dock be protected by a pier the difficulty of management would be reduced considerably. I do not think the question of cost, which is another argument used by Sir John Coode, is worth considering in a matter of this kind.

As regards the excavation of the channel, Sir John Coode recommends that it be cleared to a depth of 40 feet below high spring tides, and 28 feet below low spring tides, *i.e.*, to a level of 46 on Town Hall datum. This will necessitate an initial excavation of rock.

<i>Rock.</i>		
Cubic feet.	Cubic feet.	R
875,000	at R100 per 100 . . . .	8,75,000
<i>Moorum.</i>		
190,000	at R50 per 100 . . . .	95,000
<i>Mud.</i>		
20,000,000	at R1 per 100 . . . .	2,00,000
Total . . . .		11,70,000

And allowing that the figures quoted by Mr. Ormiston are correct, which, as he has much experience of the locality, they most probably are, the silt will accumulate to a height of 60 feet on Town Hall datum in this channel during the monsoon. This will mean a yearly deposit approximately of 25,000,000 cubic feet of mud. The initial cost of the channel will then be R11,70,000, and the yearly cost of dredging the same R2,50,000.

Moreover, the channel would be useless during 8 months of the year on account of the time required to carry out this amount of dredging.

I consider that this is almost fatal to the larger scheme.

Mr. Ormiston in his report proposes to give the dock a depth of 36 feet; this would represent a depth of 28 feet at high water over the sill, and an excavation in the channel of—

<i>Rock.</i>		
Cubic feet.	Cubic feet.	R
200,000	at R100 per 100 . . . .	2,00,000
<i>Moorum.</i>		
84,000	at R50 per 100 . . . .	42,000
<i>Mud.</i>		
3,000,000	at R1 per 100 . . . .	30,000
Total . . . .		2,72,000

and a yearly deposit of 3,600,000 cubic feet to dredge, which would cost R36,000 per annum. Mr. Ormiston, proposing to place his dock further back so as to utilize the present pier for a length of 450 feet as a refitting wharf, estimates the cost at R21,00,000. I should, however, prefer leaving the pier as proposed on present plan; and simply altering the depth of the dock and channel so as to enable vessels to be docked at high water instead of at low tide; as a matter of fact I believe that it will be found almost an impossibility for a vessel to enter the dock except at slack water, so that the advantage of having a channel deep enough to allow of access during all states of the tide is not worth the enormous outlay it will necessitate.

By reducing the depth of channel and dock 10 feet we should get a saving—

	₹
In excavation outside dock, of . . . . .	9,00,000
„ „ inside „ . . . . .	40,000
„ rubble masonry inside . . . . .	20,000
„ ashlar „ . . . . .	60,000

i.e., a total saving of ₹10,20,000, or approximately ₹10,00,000, and a yearly saving of ₹2 lakhs; moreover the dock will, in consequence of the greater rapidity with which the smaller channel can be dredged after the monsoon, be available for a far larger proportion of the year. The cost of the dock as thus designed would, according to my present calculations, amount to ₹26,50,000 approximately.

In conclusion, I have the honour to point out that the Port Trust are, I believe, intending to construct a graving dock in connection with their new Victoria Dock, and I can hardly imagine but that some mutual arrangement could not be arrived at by which this might be made to meet the needs of Government.

If this could be done it is hardly necessary to point out that it would be an immense saving to Government.

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No. 35, dated 24th April 1883.

*Abstract Estimate framed by Captain H. D. Olivier, R.E., Executive Engineer, Military Works, Bombay, of the probable expense that will be incurred in constructing a Graving Dock in Her Majesty's Dockyard at Bombay.*

₹36,41,042—No. 140B of the 2nd February 1888, from the Under-Secretary to Government, Public Works Department.

#### GENERAL DESCRIPTION.

The graving dock for which the accompanying plans have been designed is one which it is proposed to situate in Her Majesty's Dockyard at Bombay; its position will lie between the present old Bombay Dock and the pier or breakwater, which will be extended a further length of 600 feet, to afford further protection.

*Position.*—The position was fixed by Sir John Coode, who supplied certain site plans, which are attached. No details were however given, and the whole of the latter have been worked out in this office, in consultation when necessary with Mr. Ormiston, Executive Engineer of the Port Trust, whose assistance has been of great practical value.

*Dimensions.*—The dock itself will have a clear length of 500 feet, and a breadth as under :—

Breadth at floor level . . . . .	63 feet.
Breadth at broad altar . . . . .	97 „
Breadth at coping „ . . . . .	126 „

The depth will be such as to afford the following :—

Depth of water over sill, at high water spring tide . . . . .	38 feet.
Depth of water over sill, at low water spring tide . . . . .	26 „

*Construction.*—The construction of the dock is as follows. The whole of the facing, steps, and slides, altars, and flooring will be of the best ashlar, as specified, laid in Portland cement mortar, 1 to 1 of sand, and this will be



backed with rubble masonry, laid in mortar consisting for the lower 6 feet of 9 parts of lime mortar to 1 of Portland cement, and for the remainder, of the best lime mortar.

The thickness of the rubble backing will be as shown in the sections, and the flooring will be given a foundation of the same, 12 feet thick.

The entrance to the dock will consist of an invert faced with ashlar, having a breadth at coping of 99·5 feet, and a section as shown in detailed drawings.

The opening will be closed by a floating caisson working in a groove, which will be lined with granite. No details of the caisson are given, but can be worked out hereafter.

The sides of the dock will consist of 6 altars, 2 feet broad and 5 feet high, leading down to the broad altar, which will be 4' 6" broad. Below this the sides are stepped down, as shown in the general section, plate 2; at intervals of 70 feet, slides and steps are alternately provided, the details of which are given in the plans.

The floor of the dock is given a fall of 1 foot towards the entrance, for purposes of drainage, and to assist in keeping out leakage a drain is run all round the dock, beginning at the west side of the entrance, and falling 2' 6" to the east side where it enters the sump.

*Filling arrangement.*—The dock will be filled by two culverts, one on each side of the entrance, which run as shown in plan, and are fitted with double faced penstock valves and the necessary stops for inspection purposes.

*Emptying arrangement.*—The emptying arrangements are as follows. The dock drains into a sump on the east side of the entrance, and thence a culvert 5' × 6' will run to the pumping well, from which the water is lifted by 3 centrifugal pumps and discharged into the sea at low water level. Arrangements will have to be made to prevent the flooding of the pumps. If, however, it is considered that this will result in risk, the alternative plan will have to be to provide plunge pumps and to station the engines on the upper level. The cost of these will however be very great, and I consider that centrifugal pumps properly protected will answer the purpose quite well.

#### *Rudder chamber.*

There will be a rudder chamber provided in the flooring of the dock; it will be 12 feet deep, and lined with ashlar, in order to allow the rudders of any vessels which may require it to be unshipped.

#### *Pier.*

The present pier will be continued, and the wall of eastern approach to the dock will be produced to meet it so as to form a new pier 600 feet long. The section of the walling will be as shown in plan (3), and will consist of rubble masonry faced with ashlar, averaging 2 feet thick; the latter shall in every way resemble the ashlar of the main work; in arriving at a rate for this work double the ordinary rate is taken so as to allow for founding the same, the best means of doing which is not here discussed.

#### *Capstans.*

There will be three capstans worked by hydraulic pressure round the dock, one on each side of the opening, and one at the end; there will also be one at the pier head.

The whole of them will be connected in the hydraulic machinery, the pipes of which will be carried as shown in plan (12). The penstocks, &c., will all also be worked by the same means.

*The Engine House.*

This consists of a boiler room and a coal shed, covered by a cast-iron tank capable of holding 50,000 gallons of water, and also of a main engine room and supplementary engine room and accumulator for the hydraulic engines. The main engine room will be at a low level, *viz.* about 42 Town Hall datum, being sunk in a well, and it and the hydraulic engine room will be roofed with Mangalore tiles on teak rafters and iron trusses, as shown in plans.

The details of stairs, doors and windows are shown in plan. The plinth and superstructure will be built of coursed rubble masonry backed with uncoursed ditto, the cross walls being of uncoursed rubble throughout. The foundations will be of rubble masonry. The chimney will be of brick founded on concrete, and the accumulator which is of coursed rubble backed with uncoursed ditto will also be founded on concrete.

*Pumps and Engines.*

The pumps will be capable of emptying the dock in 4 hours, and a lump sum is taken for their cost; if plunge pumps are used this sum must be increased to £30,000.

*Main Dam.*

In order to enable the work of excavation and construction to be carried out it will be necessary to exclude all water from the works; for this end a dam, to be called the main dam, will have to be made between the end of the present breakwater and the eastern abutment of the old Bombay Dock. This should be such a structure that when the space within is empty it shall be capable of keeping out the highest tides from the site of the works. If, as is possible, the work be carried out by contract, then the contractor shall submit with his tender a design for the same, and shall be held responsible for the efficacy thereof when constructed.

Further stipulation as to the nature and construction of the dam will be given at the time of calling the tenders.

*Exterior Dam.*

As the present pier is founded on "Pierre Perdue" it is quite possible that it will be found that when the interior portion is excavated "blowing" may occur; in order to guard against this it will probably be necessary to face the whole of the outside of this pier with a Dam, to be called the exterior Dam. This will be put in on the similar conditions to the main Dam.

*Materials of Dam.*

The earth for both of these dams can be taken from the materials to be excavated from the interior of the dock, and this should be borne in mind in estimating for these items.

*Excavations and Foundations.*

The whole of the excavation to be taken down to the full depth shown in plans, or lower if ordered. The foundations surface to be thoroughly cleaned; any crevices to be scraped out and filled in with mortar and chips. No foundation to be laid until the surface of the rock has been passed by the Engineer. The whole of the surface so passed should be covered with a layer of Portland cement on which the rubble foundations will be laid while it is still wet.

The pumping operations are to be so arranged that the work should be kept perfectly free of water while the foundations are being laid, and that no mortar is drawn out of the work with the pumped water.

*Materials.*

*Rubble.*—All rubble masonry to be built of large sized flat bedded stones, properly selected for their places, the stones to be roughly dressed with a hammer so as to have no weak edges, and carefully laid with a suitable proportion of chips to fill the interstices. The whole to be hand set and solidly bedded in mortar, with which also each piece is to be completely surrounded. The stones to break joints both vertically and horizontally, there shall be no hollow or dry portions in the work. The stones at quoins, offsets, and falls (other than those faced with coursed rubble, hammer dressed, as lining to culverts, composite facing or ashlar) are to be specially large. They are to be hammer dressed, and have the face joints and leads neatly drawn. The rubble masonry is to be carried up simultaneously with the facing, and be well bonded into it.

*Ashlar.*—The facing of the dock walls, penstock chamber, &c., to be of ashlar, laid in alternate header and stretcher courses, from 9" to 18" high, as shown in the plans, the headers to tail into the work twice their height and the stretchers not less than their height. The joints in all cases are to be dressed full and fair to a depth of at least 6 inches, within which they may be left rough. The lower beds of all the stones to be dressed full and fair for their whole depth. The upper beds of the binders to be dressed full and fair for 18" inches in depth, and of the headers and stretchers for 9 inches in depth. All the stones except binders in wing walls, round head, circular head of pier and salient corners, are to be 3 inches deeper on bed than those used in straight work or hollow corners (which are described above) and to be dressed full and fair, on upper beds of binders for 21 inches in depth, and on the upper beds of headers and stretchers 12" in depth, but otherwise they are to be similar in description. The tails in all cases are to be left rough, the faces to be medium, dressed fair, and to the batter where there is any. The upper two courses or as many as may be ordered under the coping headers, to be adjusted in height to suit the proper level of the top of the walls. All stones are to be laid and jointed in Portland cement mortar, consisting of one part of Portland cement to one part of clean sand, and all joints are to be scraped out clean 1" in depth, and pointed with Portland cement. No beds or joints to exceed  $\frac{3}{8}$ " in width. The flooring will consist of what may be called composite ashlar, being composed of alternate headers and stretchers interspersed with large bond stones 2'  $\times$  2'  $\times$  4' tailing down into the rubble below, as shown in plan No. (2).

*Ashlar in coping, drain openings and Invert.*

The coping of the top of the dock and also the broad altar is to be laid, one header and two stretchers alternately. The headers to be of an average of 18" long on the face, and to be of the full height of 18," and the full breadth of header in the case of the coping to be 4' and in the case of the broad altar 6 feet. The two stretchers between them to average 6' long in face. All joints to be dressed full and square the whole depth, the front edges to have nosing as per detailed drawings. The coping of the altars will be similar to the above, but all stones will tail into the work to a depth of at least 1 foot. The steps and slides will be laid as shown in detailed plans, all joints being dressed full and fair for their whole depth.

The beds and joints of the ashlar in drain openings, culvert outlets, &c., are to be dressed full and fair for their full depth. The entrance and emptying culverts will, where necessary, be lined with ashlar rough dressed on face, and averaging 18" in depth, all joints being dressed back fair for their full depth.

The ashlar of the invert to average 3 feet on the floor and on the curves and sides, all beds and joints to be dressed full and fair for the whole depth, the edges to be rounded off as shown in plans.

*Granite Work.*—The caisson groove, penstock chambers, 2 stop groove junctions, with emptying and filling culverts to be of granite of the best quality, as shall be specified when calling for tenders, to be set in one part Portland cement and 1 part sharp clean sand, the joints after being raked out 2 inches to be caulked with oakum and repointed with Portland cement.

*Stone.*—The whole of the stone to be of the best quality, and approved of by the Engineer, and with the exception of what is specified to be granite, it is to be blue basalt of the best quality procurable in the Island of Bombay or adjacent thereto. No stone with dries, vents, flaws or any other defect is to be put in the work.

Unless otherwise specified, the exposed faces are to be fine dressed, and in every case all surfaces are to be true and out of winding; the beds to be dressed full and fair for their whole depth, and the joints full and fair for at least 6 inches in depth, the tails being left rough; the joints, front copings, are to be joggle-grooved; if required the stones in circular work and arching are to be cut to suit the circles, and the joints are to radiate and be summered for the full depth of the bed.

The stone to be laid on its natural bed; the bond to be generally equal to the height of the course. Stones which are too heavy for two men to lift are to be set by lewises or cramps, or shears and proper tackle.

The stone which is likely to be used in the course of the day is to be kept under shade so as to be cool while being laid; the stones to be wetted with swabs just before they are to be laid; the work itself while being built is to be protected from the sun by mandups of matting. The work is to be kept free of water while in progress by steam pumps of ample power to do so.

The present wharfs, fortification walls and slips are to be removed, and approved portions of the materials are to be utilized in the new work as the Engineer considers may best be done.

*Mortar.*—The mortar to be used on the work, unless when specially specified as of Portland cement, to be composed of one part of lime and one part of clean washed sand, and when specified one-tenth part of Portland cement may be added; but the proportions may be varied at the option of the Engineer.

The ingredients to be mixed in pan-mill driven by steam power, as long and in such a manner as the Engineer may order; no mortar mixed with Portland cement to be used older than 24 hours.

*Lime.*—To be the best andheri Kunker lime freshly burnt, to be approved by the Engineer to be slaked on the work in the presence of the Engineer or his agent, and screened so as to remove all foreign matter.

*Sand.*—Sharp, clean, hard sand, free from shell, and to be washed free of earthy impurities and screened.

*Portland cement.*—To be from approved maker from the Thames or Medway in England, it shall weigh not less than 90lb per cubic foot, and be ground sufficiently fine to pass through a sieve of 2,500 meshes per inch with not over 10 per cent. residue. Specimens mixed neat in water shall be able to support in tension 350 lbs. per square inch when seven days old. The cement for pointing, unless otherwise specified, is to be mixed with its own bulk of moderately fine sand, washed and screened. The cement must not set in any season of the year in less than two hours.

*Concrete.*—The concrete to be composed of 4 measures of stone metal  $1\frac{1}{2}$ " gauge or clean shingle, one measure of fresh lime and one and a half measures of sand, or in such other proportions as may be found desirable. These ingredients to be well mixed at the site in a trough of a suitable description, sufficient water being added to bring them to a proper consistency. The concrete to be well rammed in successive layers of about 8 inches, until the necessary height is attained; care must be taken to keep the sides plumb, and if necessary planking must be used.

*Coursed Rubble Masonry.*—The masonry in the Engine house to be similar to that in the new barracks now in construction at Colaba.

*Brick work.*—Bricks to be firmly and evenly bedded in mortar and laid in English bond. The joints not to exceed  $\frac{3}{8}$ " and in all circular portions to radiate truly from the centre, the bricks being gauged to proper shape to this purpose, all bricks to be well soaked in water before being used on the work, and no broken pieces to be used at closures.

*Wood work, &c.*—The doors and windows, wood work, &c., in the Engine shed will be according to Captain Marryat's specification.

*Demolition.*—A considerable number of buildings, walls, &c., will have to be removed, and some of them, for instance, the slip ways and spar sheds, will probably have to be rebuilt elsewhere; a lump sum has been taken for this, allowing for the demolition, and also where necessary for their reconstruction.

*Filling in.*—The amount of filling in, if the old fortification be taken into account, as it will have to be, will not exceed the amount of excavation; it is therefore not proposed to take any account of it, but a sufficient rate has been taken for excavation to include the placing of the material excavated where required; the distance in no case exceeds 200 feet.

*Excavation.*—Any surplus materials excavated can in the case of rock, and if it is fit for the purpose, be used as rubble; and this must be taken into account in tendering for the work. The remainder must be removed and, in the case of rock, stacked, as pointed out by the Engineer. All earth must be used for filling or for the dams.

### General Abstract.

Quantity.		Items.	Rate.	Per	Amount.	
			<i>R. a. p</i>		<i>R</i>	<i>dec.</i>
875,000	Cubic feet	Excavation in rock under water in approach channel.	100 0 0	100	8,75,000	00
190,000	Ditto	Excavation in rock under Moorum in approach channel.	50 0 0	100	95,000	00
19,500,000	Ditto	Excavation in rock under Mud in approach channel.	1 0 0	100	1,95,000	00
		Total Cost of Excavating the approach channel.	...	...	11,65,000	00
2,539,887	Ditto	Excavation in rock within the dam.	5 0 0	100	1,26,991	85
1,153,469	Ditto	Excavation in earth within the dam.	3 0 0	100	34,754	07
1,053,°62	Ditto	Filling in with Rubble Masonry as per specification in main work.	27 8 0	100	2,89,812	5
		Carried over				

*General Abstract—contd.*

Quantity.		Items.	Rate.	Per	Amount.	
			<i>R a. p.</i>		<i>R</i>	<i>dec.</i>
		Brought forward .				
261,935	Cubic feet .	Ashlar in with Rubble Masonry as per specification in main work.	250 0 0	100	6,54,837	50
527,725	Ditto .	Filling in with Rubble Masonry in Pier.	50 0 0	100	2,63,862	50
100,400	Ditto .	Filling in with Ashlar in Pier	250 0 0	100	2,51,000	00
80	Running feet	Tunnelling . . . .	30 0 0	1 R. ft. .	2,400	00
1	Number .	Cost of building, Engine house, &c., as per Estimate.	50,000 0 0	Each .	50,000	00
1	Ditto .	Cost of purchase and erection of pumping Machinery.	1,50,000 0 0	Ditto .	1,50,000	00
1	Ditto .	Cost of erecting hydraulic Machinery connected with Capstans and Penstocks.	50,000 0 0	Each .	50,000	00
3	Ditto .	Cost of fixing and Purchasing Penstock arrangements.	3,750 0 0	Ditto .	11,250	00
4	Ditto .	Capstans . . . .	4,500 0 0	Ditto .	18,000	00
1	Ditto .	Caisson (floating) . . .	1,20,000 0 0	Ditto .	1,20,000	00
400	Running feet.	Main dam . . . .	250 0 0	R. ft. .	1,00,000	00
450	Ditto .	Exterior dam . . . .	200 0 0	Ditto .	90,000	00
4,969	Cubic feet .	Granite facing to Caisson, Groove, &c.	8 0 0	Cubic ft.	39,752	00
1	Number .	Cost of removing the present Wharf, Slip and Spar shed, and replacing them if necessary.	50,000 0 0	Each .	50,000	00
		Total . .	...	...	23,02,650	97
		Add total cost of excavating the approach channel.	...	...	11,65,000	00
		Total . .	...	...	34,67,650	97
		Add contingencies at 5 per cent.	...	...	1,73,382	19
		Grand Total . .	...	...	36,41,042	...

H. D. OLIVIER, CAPTAIN, R.E.,

*Executive Engineer, Military Works, Bombay District.*

## Karachi Harbour.

No. 18 (Public Works), dated 23rd March 1886.

From—The Government of India,

To—The Secretary of State for India.

Adverting to Your Lordship's Despatches Nos. 139 and 30, Railway, dated the 8th November 1883 and 27th March 1884, and in reply to Your Lordship's telegram of the 28th October last and Despatch No. 45, Public Works, dated 12th November 1885, we beg to report our proceedings in respect of the improvement of Karachi harbour.

2. The conversion of the Karachi creek into a port suitable for sea-going ships of considerable size first was commenced in 1860, upon a regular system, under the advice of the late Mr. J. Walker and Mr. W. Parkes. The works were mainly directed to sheltering the bar by breakwater, and to deepening the harbour and entrance by means of groynes, dredging, and other expedients.

3. In 1882 the condition of affairs was, that the anchorage area (20 feet depth and upwards) had been increased from  $58\frac{1}{2}$  to 90 acres, and the entrance to it over the bar deepened by from 6 to 7 feet; at Kiamari, which is at the top of the anchorage, some wharfage had been built, and an iron pile ship pier, called the Merewether Pier, was under construction; while a creek, a mile and a half long, running up to the native town of Karachi, had been deepened for the use of native coasting vessels, and lighters bringing cargo discharged by vessels in the anchorage, and had been provided with a large jetty.

The measures contemplated in the early future were (1) the removal of "Deep Water Point," and (2) the prolongation of the East Groyne, both intended to improve the anchorage and its approaches, as also (3) a moderate increase in the facilities for landing.

4. At this juncture, the rising importance of the wheat trade and other circumstances contributed to a general awakening as to the backward condition of the port.

In August and October 1882, Mr. Lightfoot, the Acting Agent, Sind, Punjab and Delhi Railway, represented forcibly to his Board (1) that cartage and agency charges were excessive, chiefly owing to the double handling of exports at the city of Karachi; (2) that Home freights were high, owing to the want of special encouragement to imports; and (3) that the landing accommodation and conveniences were utterly insufficient, as well as unnecessarily distant from the shipping. The essence of his recommendations was the development of Kiamari and the gradual transfer of business there. He was supported by Mr. Gilbert, the Deputy Agent of the Railway, who recommended the formation of a Port Trust, the raising of loans to meet capital outlay, and the solicitation of Government aid. Mr. Benedict, the Chief Engineer of the Company, suggested details for reclamation of wharfage at Kiamari and its direct connection with the railway by a line along the Napier Mole. The Punjab Government also, in a Resolution dated November 28th, 1882, upon the development of the wheat trade, endorsed Mr. Lightfoot's suggestions, and offered others of much importance.

5. At the beginning of November 1882, our Hon'ble Colleague, Mr. Hope, visited Karachi accompanied by Colonel Stanton, Director General of Railways, Colonel Medley, Consulting Engineer, and the chief officers of the Sind, Punjab and Delhi Railway, and held conferences at Karachi with the Commissioner

in Sind, the Harbour Board, the Chamber of Commerce, and various European and Native merchants.

6. The result of these enquiries was to establish both the necessity for greatly increased landing and shipping facilities, and the inexpediency of encouraging the expensive and otherwise prejudicial system of double handling of goods by affording such facilities at the distant Native Jetty and town rather than at Kiamari. This preference for Kiamari, about which there was at first some difference of opinion, has since been endorsed by the whole mercantile community, and the bulk of the foreign trade is now conducted there.

7. As regards accommodation for goods awaiting export or on import, it was deemed sufficient for the time that a considerable reclamation should be made at Kiamari by the Harbour Board and Railway Company, and three large warehouses erected thereon. These works, together with some indispensable additions to the main goods station, have been carried out at a cost of about  $3\frac{1}{4}$  lakhs of rupees. The excellent effect produced by them, jointly with other facilities which the Sind, Punjab and Delhi and the Indus Valley Railways were able to afford, has been fully recognised in the Report of the Committee of the Karachi Chamber of Commerce for 1884-85.

8. As regards the landing and shipment of goods six alternative schemes were brought forward :—

	Estimated cost in lakhs.
1. Tidal Basin, &c., east of Napier Mole . . . . .	240
2. Basin Dock and Quays west of Napier Mole . . . . .	164
3. Kiamari Groyne Wharfage scheme . . . . .	33½
4. Napier Mole Wharfage scheme . . . . .	36½
5. Native Jetty, East extension . . . . .	50
6. " " West " . . . . .	45

After very full discussion of these, the two first were rejected as being entirely beyond even the possible needs of the port for many years to come; the two last were held to be inadmissible owing to their extreme distance from the anchorage and to their being essentially a perpetuation of the city double-handling system; while, as to the third, it was held that an advance from Kiamari southwards would be in the wrong direction for trade, besides being inconvenient for working in certain conditions of weather. On the other hand, the fourth scheme, for the extension of ship wharfage from Kiamari northwards, together with a direct line of railway to that place along the west of the Napier Mole, was found to be a satisfactory solution of all essential requirements, possessing the advantage that it could be carried out gradually, as funds allowed. Its execution has, therefore, been kept in view in all subsequent proceedings.

9. Since 1882 much correspondence has taken place between the Commissioner in Sind and the Harbour Board, as also between the Governments of India and Bombay. Sir James Fergusson, moreover, visited Karachi in November 1884, and recorded an important Minute, in which he (1) entirely concurred in the adoption of the "Napier Mole Wharfage scheme," and in the necessity for the direct railway communication along it; (2) supported a proposal of the Harbour Board to begin it at both ends, constructing ship wharfage for two vessels to the south and boat wharfage 600 feet long at the north; (3) urged grants from Imperial funds of  $2\frac{1}{2}$  lakhs and one lakh for the removal of Deep Water Point and the East Groyne extension respectively; (4) noticed the desirability of a graving dock: and (5) advocated arrangements for loans, up to a limit of 25 lakhs, being raised by a Port Trust.



10. The position in October last was as follows :—

*1st.*—The Harbour Board had obtained the loan of 10 lakhs, referred to in paragraph 6 of our Despatch No. 38 of July 25, 1884, ( $2\frac{1}{2}$  from the public and  $7\frac{1}{2}$  from Government), which was being distributed thus—

	R
Wharfage for two ships north of Merewether Pier . . .	5,42,000
Boat wharf at northern end of proposed wharfage . . .	2,58,000
Dredging appliances . . . . .	1,50,000
„ channel along proposed wharfage . . . . .	50,000
	<hr/>
	10,00,000
	<hr/>

*2nd.*—A Bill constituting a Port Trust was under preparation, and is expected to pass in the Bombay Legislative Council shortly.

*3rd.*—The requests of Sir James Fergusson's Government for an Imperial grant of  $3\frac{1}{2}$  lakhs and the loan of the remaining 15 lakhs were in abeyance.

11. On receipt of Your Lordship's telegram of the 20th October last, we arranged that His Excellency Sir D. M. Stewart and our Honourable Colleagues, the late General Wilson and Mr. Hope, who were all about to pass through Karachi, after visiting Beluchistan and Pishin, should make fresh special enquiries into the state of trade and the facilities at the port for dealing with it, and we have received their views. We likewise consulted the Government of Bombay, and their opinion, together with those of the Commissioner in Sind and the Director of the Indian Marine, and a plan showing the improvements proposed, are appended to this Despatch. The general result we will now explain.

12. As to the growth of trade, there can be no doubt that it has been very

Value. R	Years.	Tons.	
8,40,65,192	1882-83	275,996	considerable. The tonnage of steamers
9,40,06,017	1883-84	360,030	using the port and the value of the trade
10,59,81,948	1884-85	363,908	have risen, since 1882, to the extent shown
			marginally. During the current year,
			up to date, the increases in many special
			articles have been still more remarkable,

notwithstanding the prejudicial influence on trade which political uncertainties have undoubtedly exercised. But the trade is not only a rapidly growing one, it is one subject to sudden rushes caused by variations in the prices of wheat, seeds, &c. The Government calls upon the port are, we need scarcely point out, liable to similar violent fluctuation on occasional emergency.

13. The port itself, on the other hand, is at present utterly inelastic. The anchorage only suffices for about 20 ships, and these take from 4 or 5 days to 9 or 10 days to unload, according to whether the Merewether Pier or lighters in the stream are employed. Of lighters there is a tolerably fair supply, which is being increased by private enterprise, but of berths for shipping to discharge alongside there is now but one, and there will be only three when the additions mentioned in paragraph 10 have been completed. It has sometimes happened that a vessel has had to stand out to sea for a while, until there was anchorage for her, and even when in the harbour, the process of discharge is usually a slow one. But whatever be the difficulties now, there can be no doubt that they will be much aggravated when the normal growth of trade is suddenly supplemented, as in two years it will be, by the opening of the Sukkur Bridge and of the

Sind-Pishin and Sind-Sagar Railways, comprising above 600 miles of new line, unless timely provision be made to meet the contingency.

14. The proposals of the Commissioner in Sind and Harbour Board in their latest form, which are supported by the Bombay Government and the Director of the Indian Marine, are as follows:—

	Estimated cost in lakhs.
1st—Extension of wharfage 1,200 feet for three more ships, including cranes and all appliances complete . . .	10½
2nd—Special works, comprising—	
Deepening of the entrance, 2 feet . . . . .	} 5
Additional moorings . . . . .	
„ warehouses . . . . .	
„ dredging gear . . . . .	
	15½
3rd—Removing Deep Water Point . . . . .	2½
4th—Lengthening East Groyne . . . . .	1
5th—Direct railway line between Bunder Station and ship-wharves not estimated in detail, but believed to be likely to come to about . . .	5½
	9
GRAND TOTAL . . . . .	24½

15. For the first two items the Harbour Board would provide by the increase of the “10-lakh loan” to 25½ lakhs, and they ask Government to lend the amount on the same terms as those on which the 7 lakhs have been advanced, *viz.*, interest to run at 4½ per cent., principal to be repaid in 30 years, and both interest and repayment to be guaranteed by the Local Government. In proof of their ability to meet their liability for the 15½-lakh loan, the Board shew, in addition to the information given in their previous application, dated 26th May 1884, that their income in 1884-85 rose to R4,53,226; that in the seven months of the current year it already amounts to R4,01,889; and that the Merewether Pier is now paying fully eleven per cent. on its cost. They ask the loan from Government in consequence of the failure of their previous 10-lakh loan to attract more than 2½ lakhs from the public.

For the remaining three items, the local authorities and the Bombay Government ask for a grant from Imperial funds.

16. Regarding these proposals on their merits, we have no hesitation in saying that they all appear to us to be proved, by the evidence produced, to be very reasonable, and certainly not in excess of the requirements of the case. In fact, it seems not improbable that, by the time they have all been carried out, a further extension of the ship wharfage may be found indispensable.

17. As to their financial aspect, we consider that the Harbour Board, or future Port Trust, in undertaking the responsibility of interest at 4½ per cent., and repayment in 30 years, for loans amounting to 25½ lakhs of rupees, have done as much as can be expected from what is only a moderate-sized port with a young, though a rising trade. The Provincial Government, again, already contribute a lakh a year to the Harbour Works, and have more than once effectively shewn that they cannot afford to give more, consistently with a due regard for the claims of other parts of the Presidency.

The Government of India, on the other hand, certainly possess a considerable interest in the efficiency of the port, whether in view of the large railway receipts, which will henceforward be entirely their own, or of the contingency

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	Estimated cost in lakhs.
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2nd—Special works, comprising—	
Deepening of the entrance, 2 feet . . . . .	} 5
Additional moorings . . . . .	
„ warehouses . . . . .	
„ dredging gear . . . . .	
	15½
3rd—Removing Deep Water Point . . . . .	2½
4th—Lengthening East Groyne . . . . .	1
5th—Direct railway line between Bunder Station and ship-wharves not estimated in detail, but believed to be likely to come to about . . .	5½
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The Government of India, on the other hand, certainly possess a considerable interest in the efficiency of the port, whether in view of the large railway receipts, which will henceforward be entirely their own, or of the contingency

of military operations on the North-Western Frontier. These interests, and a consequent liability, have already been to some extent recognised by the Government of India, and are frankly admitted, in both their commercial and their military aspects, by the communications from Your Lordship to which reference is made in the first paragraph of this Despatch.

18. Under all the circumstances of the case, we have decided (1) to advance the loan of  $15\frac{1}{2}$  lakhs on the terms proposed; (2) to grant  $3\frac{1}{2}$  lakhs for removing Deep Water Point and extending the East Groyne; (3) to construct the extension of the Railway from the Karachi Bunder Station to the ship wharves. The two latter items will be considered as additions to the sums allotted to Defences and to Military Railways respectively in our Financial Despatch No. 264, dated 22nd September 1885, but not as additional to the total annual grants from loan funds.

As the expenditure will necessarily be spread over from two to three years, we do not anticipate any serious difficulty in meeting the allotments from year to year.

19. We trust that our proceedings will meet with Your Lordship's approval.

No. 15 P. W., dated 27th May 1886.

From—The Secretary of State for India,

To—The Government of India.

I am in receipt of Your Excellency's Public Works letter No. 18, dated 23rd March 1886, detailing what has already been done, and the further measures which it is intended to take for the improvements of Karachi Harbour.

2. Your letter and its enclosures inform me that 10 lakhs, being a loan by Government to the Harbour Board, is now being expended in improvements

	£
Wharfage for two ships north of Merewether Pier	5,42,000
Boat wharf at northern end of wharfage	2,58,000
Dredging appliances	1,50,000
„ channel	50,000
	<u>10,00,000</u>

in the manner marginally noted, while, in consequence of more recent investigations, it has been decided to expend a further sum of  $24\frac{1}{2}$  lakhs for still further works of enlargement and improvement, to be distributed as follows:—

	Lakhs.
1. Extension of wharfage for three more ships	10½
2. Deepening entrance two feet and additional moorings, warehouses, and dredging gear	5
3. Removing Deep Water Point and lengthening East Groyne	3½
4. Direct railway between Bunder Station and ship wharf	5½
Total	<u>24½</u>

3. To meet this further expenditure, it has been determined by your Government to increase on the same terms the existing 10 lakhs loan to the Harbour Board by the amount required to meet the cost of items 1 and 2, while the balance required for items 3 and 4, namely, 9 lakhs, will be provided from your general revenues as a proper contribution to an important work which is required in the interests of the country generally. I note that this contribution of 9 lakhs will be treated as an addition to the sums allotted to Defences and Military Works, but not as additional to the total annual grants from loan funds.

4. I have learnt with satisfaction that you are fully sensible of the necessity of rendering the accommodation afforded by Karachi Harbour adequate to the existing requirements of trade, and I have no hesitation in according my sanction to the measures which you have adopted for this purpose. But, as Your Excellency observes, the trade of this port, which has risen between 1882-83 and 1883-84 from 275,996 tons to 363,908 tons, is certain to increase still further in the future, when the Sukker Bridge and the frontier lines now in course of construction are completed, and I concur with your Government in thinking that the progress of this trade should be carefully watched, and that timely provision should be made for meeting its growing needs. It is scarcely necessary for me to repeat that the position of Karachi, in connection with the system of railways on the North-West Frontier, renders it a matter of vital consequence, on military grounds, that the port should be made in all respects as efficient as its situation and the funds at your disposal permit.

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No. 73 (Military), dated 17th March 1887.

From—The Secretary of State for India,  
To—The Government of India.

In my Military Despatch No. 24, dated 27th January 1887, I communicated to Your Lordship the views of Her Majesty's Government on the subject of the steps which had been taken by your Government in connection with the defence of the North-West Frontier of India.

2. Lord R. Churchill's Public Works Despatch No. 45 of the 12th November 1885 dealt with the question of the condition and capacity of the harbour at Karachi, with special reference to the importance of having at that port harbour and railway accommodation sufficient to bear the excessive strain to which it would undoubtedly be subjected in the event of a war on the North-West Frontier.

3. Regarding the provision of these facilities as a measure of military precaution, I informed Your Lordship that the funds necessary for the work must be supplied by the Supreme Government, and be taken into account in any estimate that may be formed of the sums to be spent on strengthening the defences of the frontier; but as this point was not referred to in the later Military Despatch above mentioned, it seems desirable to do so now, in order that the Military authorities in India may not lose sight of the fact that the harbour and railway works of Karachi are an integral portion of the whole defence scheme, and are to be carried to completion in that view.

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## BUILDINGS.

### New Viceregal Lodge, Simla.

No. 78 (Public Works), dated 24th September 1888

From—The Government of India,

To—The Secretary of State for India.

We have the honour to report, for Your Lordship's information, that the new Viceregal Lodge on the Observatory Hill in Simla is now practically finished. The house was occupied by the Viceroy and His Excellency's family on the 23rd of July last.

2. The accounts of the construction of the building are not yet finally closed, but we expect to close them at the end of this month and to disperse the establishment at the end of October next. We are now in a position to report within very narrow limits the actual cost of the project as compared with the estimates which have been sanctioned by Your Lordship.

3. The sanctioned estimates are as follows :—

	R
Estimate for the Viceregal Lodge, additional works, subsidiary works, &c., &c., sanctioned in Despatch No. 67 P.W. of 30th November 1887, from the Secretary of State . . . . .	8,69,676
Estimate for decorations and furniture mentioned in paragraph 6 of Government of India Despatch No. 50 P. W. of 2nd September 1887, and in the Despatch from the Secretary of State quoted above . . . . .	2,00,000
Estimate for the installation of Electric Light, referred to in Government of India Despatch No. 47 P. W. of 26th August 1887, and sanctioned in Secretary of State's telegram, dated 2nd November 1887 . . . . .	1,50,000
Total . . . . .	12,19,676

This sum includes Rs20,000 for laying out grounds; it has been found necessary to set aside half this amount for future expenditure at intervals, so that the sanction for the project exclusive of this sum of Rs10,000 stands at Rs12,09,676. The estimated actual cost, also excluding this sum of Rs10,000, will be Rs13,12,198, or Rs1,02,522 in excess of the sanction.

4. The following statement compares the cost with each of the main heads of the sanctioned estimate :—

Main Heads.	Estimate.	Estimated cost to end of September 1888.	DIFFERENCE.	
			Excess.	Saving.
	R	R	R	R
I.—Main building (slightly modified from original design) . . . . .	5,68,732	6,18,049	49,317	...
Contingencies . . . . .	28,437	30,000	2,463	...
II.—Alterations to main building . . . . .	12,269	14,411	2,142	...
III.—Additional works on main building . . . . .	12,899	13,079	180	...
IV.—Subsidiary buildings and works . . . . .	*72,593	74,507	1,914	...
V.—Reserve for unforeseen requirements . . . . .	34,746	41,104	6,358	...
Loss on stock . . . . .	Nil	10,000	10,000	...
Total " Works " . . . . .	7,29,676	8,02,050	72,374	...
VI.—Establishment . . . . .	1,20,000	1,57,000	37,000	...
VII.—Tools and Plant . . . . .	20,000	11,000	...	9,000
TOTAL FOR THE BUILDING . . . . .	8,69,676	9,70,050	1,09,374	9,000
Furniture and decorations . . . . .	2,00,000	2,06,749	6,749	...
Electric Lighting Installation . . . . .	1,50,000	1,35,399	...	14,601
GRAND TOTAL . . . . .	12,19,676	13,12,198	1,16,123	23,601
Excess . . . . .	...	...	92,522	...

The excess of R92,522 shewn by this statement has to be increased by the sum of R10,000 which has been already mentioned.

5. During the present rainy season some of the old retaining walls on certain roads on the Observatory Hill have failed. The ground behind them has slipped, and it is necessary to rebuild the walls. This work cannot be carried out before the winter. The estimated cost of making the defects good is about R24,500, and we propose to sanction the estimates in ordinary course, the expenditure not being, we consider, a fair charge against the estimate for the Viceregal Lodge, as the roads are not new ones and would in any case have had to be maintained.

6. We append, for Your Lordship's information, three tabular statements which give, in full detail, the differences between the various items of the sanctioned estimates and the actual cost of them. Explanations of the differences are also given. It may be said, generally, that the work is of a much higher class than any which has been previously executed in Simla; it has consequently been difficult to estimate accurately beforehand either the time the building would take to construct, or its cost.

7. We hope to send by the next mail a set of photographs of the completed building for Your Lordship's inspection, and, in the course of a few weeks, a set of plans also.

\* Includes R20,000 for laying out grounds, of which R10,000 has been set aside for future expenditure.



## Statement

## Part I.—Comparison of Expenditure

Number and description of sub-heads as per estimate.		AS PER ESTIMATE.			
		Quantity.	Rate.	Per.	Estimated cost.
1		2	3	4	5
			R a. p.		R
Main head I	Excavation and preparing site as follows:				
1	Cutting . . . . c. ft.	1,045,841	12 0 0	% c. ft.	12,543
	Retaining walls and approach roads—				
	Expenditure on approach road from Boileaugunge to Observatory Hill.	...	...	...	4,830
	Dry stone walling in retaining wall, 1st class . . . . c. ft.	11,048	18 0 0	% c. ft.	1,989
	Dry stone walling in retaining wall, 2nd class . . . .	72,571	5 0 0	% „	3,629
	Concrete in retaining wall, 1st class c. ft.	3,262	30 0 0	% „	979
	Items under Rs. 500 . . . .	}	...	...	879
	Earthwork in retaining wall, 1st class, Rs. 131 . . . .				
	Ditto 2nd class, Rs. 400 . .				
	Rubble masonry in retaining wall, 1st class, Rs. 348 . . . .				
	Concrete.				
2	Concrete . . . . c. ft.	84,600	32 0 0	% c. ft.	27,066
3	Ditto in floors in steps . c. ft	40,001	50 0 0	...	20,000
	Rubble masonry in Building, excluding kitchen.				
4	Verandah plinth . . . .	6,931	42 0 0	% c. ft.	2,911
5	External . . . .	1,01,043	42 0 0	...	42,438
6	Internal . . . .	55,062	45 0 0	...	24,773
	Rubble masonry in kitchen wing and open court.				
7	Internal . . . .	54,100	45 0 0	% c. ft.	24,330
8	External . . . .	20,000	48 0 0	...	9,600
	Rubble masonry.				
9	In foundations, main building, above sills . . . .	31,546	38 0 0	% c. ft.	11,937
10	In foundations, main building, below sills . . . .	33,727	38 0 0	% „	12,816
11	In foundations of kitchen wing .	28,657	40 0 0	...	11,463
	Carried over .	...	...	...	...

## No. I.

*to date with sanctioned Estimate.*

As Executed.				Explanation by the Engineers of differences between estimate and actual expenditure.
Actual quantity to end of June.	Total estimated cost of completed work.	Comparison with estimate.		
		More.	Less.	
6	7	8	9	
	R			
15,54,861	12,600	52	...	
...	4,930	...	...	
11,038	2,031	42	...	
71,118	3,604	...	25	
3,262	980	1	...	
...	848	...	31	
84,727	27,215	149	...	
48,657	21,855	1,855	...	(3) There should have been a small saving due to omission of 2nd floor verandah on west, but it is more than swallowed up by the extra work done. Concrete of sweepers' steps below kitchen wing was not contemplated in estimate.
6,931	2,911	...	...	
103,533	46,353	3,915	...	(5) Excess due to extra work in towers, gables, and in filling between verandah pillars, the latter class of work being twice as expensive as ordinary rubble as it is faced on both sides and all stones picked. Sufficient allowance was not made in quantity and rate.
80,366	24,778	...	...	
61,785	24,330	...	...	
43,365	9,659	59	...	
31,556	12,611	624	...	
33,727	12,816	...	...	
31,032	11,575	112	...	
...	...	...	...	

## Statement

## Part I.—Comparison of Expenditure

Number and description of sub-heads as per estimate.		AS PER ESTIMATE.			
		Quantity.	Rate.	Per.	Estimated cost.
1		2	3	4	5
	Brought over .	...	R a. p.	...	R
12	In spreading foundations and dwarf walls and pillars . . . . .	8,807	38 0 0	...	3,347
	<i>Stonework.</i>				
13	In interior of building . . . . .	500	4 0 0	pr. c. ft.	2,000
14	In building, excluding kitchen and verandah . . . . .	15,756	2 4 0	...	35,451
15	In kitchen . . . . .	1,271	2 4 0	...	2,850
16	In verandah . . . . .	11,010	3 10 0	...	39,911
17	In kitchen-wing and court . . . . .	2,066	2 0 0	per c. ft.	4,132
18	In main building . . . . .	4,515	1 6 0	...	6,208
19	In plinth and strings . . . . .	1,480	1 4 0	...	1,850
20	Brick in partition walls . . . . .	6,354	90 0 0	%	5,719
21	Fancy brick work or stone in chim- neys . . . . .	5,670	95 0 0	...	5,386
	<i>Stone flagging.</i>				
22	In floors and steps . . . . .	27,874	0 6 0	per s. ft.	10,453
23	Hearth stones . . . . .	...	...	...	260
	<i>Deodar timber.</i>				
24	In verandah pillars, 1st and 2nd floors . . . . .	317	2 8 0	c. ft.	703
25	In trust partitions . . . . .	635	2 8 0	...	1,508
	Carried over .	...	...	...	...

No. I—*contd.**to date with sanctioned Estimate—contd.*

As Executed.				Explanation by the Engineers of differences between estimate and actual expenditure.
Actual quantity to end of June.	Total estimated cost of completed work.	Comparison with estimate.		
		More.	Less.	
6	7	8	9	
	Rs.			
...	...	...	...	
7,800	2,462	...	885	
500	2,008	8	...	
17,756	43,596	8,115	...	(14) Excess due to extra carved stones in Frontage Gable Octagon Towers, copings, also partly due to rate of carriage being higher than anticipated.
1,400	2,859	...	...	
11,010	55,227	15,316	...	(16) Only the stone work of upper verandah west was omitted, saving due thereto more than balanced by the extra cost of carriage. Excess in rate and quantity accounts for the balance; the rate was run up by having to keep the stone cutters practically idle for nearly two months waiting for stones, besides which the cost of dressing a good deal of the stone was more than contemplated in the estimate. The rate was insufficient, though, when the estimate was submitted, I had reason to believe that I had included all requisite provision for the work. The saving in quantity of stone in verandahs is small as the verandahs omitted were to have been for the greater part of wood, not stone.
4,000	7,025	2,893	...	(17) Excess of Rs. 2,893 due to extra cost of carriage also, and excess in quantity, and in using Kalka in lieu of Jutogh stone in dressing. Stone not intended for the work was used and caused a loss.
4,515	7,958	1,750	...	(18) Excess of Rs. 1,750 due to extra cost of carriage due to the use of Kalka stone in lieu of Jutogh. The excess is due to extra rate of stone work.
1,500	1,884	34	...	
20,070	6,834	1,115	...	(20) There are seven extra partition walls, besides which the masonry is 9" thick in places, instead of 6" as estimated.
7,571	5,386	...	...	
27,214	10,530	77	...	(22) The saving due to omission of a portion of 2nd floor verandah west more than counterbalanced by the addition, &c. (see 3) (being over expenditure from 3).
...	202	...	58	
...	5	...	788	(24) No work done, hence saving.
696	1,588	...	...	
...	...	...		

## Statement

## Part I.—Comparison of Expenditure

Number and description of sub-heads as per estimate.		AS PER ESTIMATE.			
		Quantity.	Rate.	Per.	Estimated cost.
1		2	3	4	5
			R a. p.		R
	Brought over . . . . .	...	...	...	...
26	In floor of ground, 1st and 2nd floors . . . . .	6,814	2 0 0	...	13,628
26½	Bressemer, &c., gallery . . . . .	312	2 2 0	...	663
27	In verandah joists . . . . .	2,978	2 4 0	...	6,694
28	In roof of building . . . . .	6,921	2 0 0	...	13,842
29	In partition walls . . . . .	3,429	2 0 0	...	6,858
30	In newels and strings to staircases . . . . .	960	2 2 0	...	2,040
31	1½" Planking in floors . . . . .	32,770	24 0 0	% s. ft.	7,864
32	1¼" Boarding in ceiling, 1st class . . . . .	16,252	21 0 0	...	3,413
33	Boarding in ceiling, 2nd class . . . . .	27,484	18 0 0	...	4,947
34	¾" Boarding in ceiling, 3rd class . . . . .	...	...	...	...
35	1½" Planking in verandah . . . . .	12,424	15 0 0	...	1,864
36	Ditto ditto of East wing . . . . .	...	...	...	...
37	1" Boarding in roof . . . . .	6,985	16 0 0	...	1,118
38	1½" Planking in treads and risers to staircases . . . . .	4,625	33 0 0	...	1,592
39	Ditto main staircase . . . . .	1,187	0 8 0	s. ft.	594
40	Strutting in floors . . . . .	23,690	5 0 0	% ft.	1,185
41	Boarding in verandahs . . . . .	6,626	21 0 0	...	1,391
42	Deodar columns in gallery with ornaments . . . . .	1,156	6 0 0	s. ft.	6,936
42½	Arcading, cornices, hand-railing, &c., in gallery . . . . .	1,595	6 0 0	...	9,570
43	Doors and windows . . . . .	5,040	1 4 0	s. ft.	6,300
44	Ditto frames in main block, east wing . . . . .	2,051	2 8 0	,,	5,127
45	Doors in kitchen wing . . . . .				
	Carried over . . . . .	...	...	...	...

## No. I—contd.

to date with sanctioned Estimate—contd.

AS EXECUTED.				Explanation by the Engineers of differences between estimate and actual expenditure.
Actual quantity to end of June.	Total estimated cost of completed work.	Comparison with estimate.		
		More.	Less.	
6	7	8	9	
	R			
...	...	...	...	
7,651	10,438	...	3,190	(26) Fewer joists used in kitchen, &c., hence saving.
460	927	264	...	(26½) A much larger number of bressemeres put in under the trusses round the gallery; this was deemed necessary for stiffness.
1,794	5,326	...	1,368	(27) Portion of 2nd verandah omitted, hence saving.
9,893	14,871	1,029	...	(28) Extra timber used in sweepers' gangways, railings to ditto and several extra purlings. In carrying out the work several additional pieces extra were found necessary in the Octagon Towers.
351	7,162	304	...	
412	2,041	1	...	
37,396	8,912	1,048	...	(31) Excess due to the larger area of floors put in, under stairs and over bed-rooms, Billiard-room, landing below ditto, floor of tank room, &c.
56,160	11,437	1,213	...	(33) Excess due to the much more expensive character of the ceilings adopted, the original ceiling being merely planks with beading. The cloth and papering are extras not provided for in estimate.
6,985	1,477	359	...	(37) 1½" to 2" planking used under large main gutters instead of 1".
4,678	1,557	...	35	
...	1,152	558	...	(39) Teak planks used in lieu of Deodar which was not available. Roof of verandah omitted.
23,592	1,227	42	...	
500	105	...	1,286	
1,104	8,156	1,220	...	(42) Several extra columns put up, besides the repairs to columns damaged by the rains. The excess is covered by the saving in next item.
1,345	7,657	...	1,913	(42½) Saving in rate at which work was executed.
7,199	7,846	1,546	...	(43) Several more windows and doors put in than provided.
2,033	5,200	73	...	
...	...	...	...	

**Statement**  
*Part I.—Comparison of Expenditure*

Number and description of sub-heads as per estimate.		AS PER ESTIMATE.			
		Quantity.	Rate.	Per.	Estimated cost.
1		2	3	4	5
	Brought over .	...	R a. p.		R
			...	...	...
46	$\frac{3}{4}$ " Deodar in skirtings . . . .	8,604	0 12 0	s. ft.	2,703
	<i>Teak Timber.</i>				
50	$1\frac{1}{2}$ " Planking in floors . . . .	11,195	0 12 0	per sq. ft.	8,936
51	$1\frac{1}{2}$ " teak skirtings and wainscottings	2,813	1 4 0	...	2,591
52	1" Teak casing to doors on ground floor, main block . . . .				
53	Teak casing to doors on ground floor, main block . . . .				
54	3" window sashes . . . .	6,736	1 12 0	...	11,788
55	Teak doors and windows, external .				
56	Teak doors, internal . . . .	3,135	2 4 0	...	7,054
	<i>Plastering.</i>				
57	Plastering . . . .	107,672	7 0 0	% s. ft.	7,537
	<i>Painting.</i>				
58	Wood work (oil paint) . . . .	131,927	4 0 0	...	5,277
59	Ceiling of verandah, main block .				
60	Ceiling of east wing . . . .				
61	Wall distemper . . . .	87,922	2 0 0	...	1,758
	<i>Iron work.</i>				
62	Rolled iron beams . . . .	354'76	12 0 0	cwt.	4,257
63	Do. over 16" deep . . . .	45'09	13 0 0	...	597
64	Compound girders . . . .	762'67	14 12 0	...	11,103
65	Plate girders . . . .	1,192	15 10 0	...	18,025
66	Trusses . . . .	324'38	24 0 0	...	7,785
67	Cast-iron . . . .	173'91	9 12 0	cwt.	1,695
	Carried over .	...	...	...	...

No. I—*contd.**to date with sanctioned Estimate—contd.*

As Executed.				Explanation by the Engineers of differences between estimate and actual expenditure.
Actual quantity to end of June.	Total estimated cost of completed work.	Comparison with estimate.		
		More.	Less.	
6	7	8	9	
	Rs.			
...	...	...	...	
8,704	3,527	824	...	(48) The amount of skirtings, as shown on the detail drawings and put in very much larger than contemplated in the estimate, should go against savings on 122 and 123.
11,056	9,540	604	...	(50) Excess due to extra labour in making the improved style of joints in lieu of ordinary tongues and grooves; also to the use of patent steel flooring brads instead of wire nails. The brads were in stock and I ordered them to be used.
5,398	3,851	980	...	(52 & 56) Excess on item 52 more than covered by saving against 56. Both items should be taken together.
5,005	113'65	...	423	
1,411	44'38	...	2,618	
132,811	11,675	4,138	...	(57) The excess on "plastering" is due partly to extra partitions and walls having to be covered; partly to an extra thickness of plaster being necessary to make up for the inequalities of the rough stone and bats, which were used in a portion of the building, and mainly to constant renewal and patching, necessitated by damage to surface of plaster last rains, and consequent on the erection of doors, windows, casings, wainscoting.
32,206	5,364	87	...	
...	1,724	...	34	
330	3,086	...	1,171	(62 to 67) Savings Items completed.
45'09	596	...	1	
752'67	10,959	...	144	
1,192	18,400	...	225	
324'38	6,951	...	834	
173'91	1,498	...	197	
...	...	...	...	



## Statement

## Part I.—Comparison of Expenditure

Number and description of sub-heads as per estimate.		AS PER ESTIMATE.			
		Quantity.	Rate.	Per.	Estimated cost.
1		2	3	4	5
	Brought over ...	...	R a. p.		R
		...	...	...	...
68	Wrought-iron in bolts and nuts .	387·07	24 0 0	...	9,290
69	Composition plates, &c., to verandah posts . . . . .	...	...	...	198
	<i>Roof covering.</i>				
70	Lead work (5 lb.) . . . . .	c. qr. lb. 670-2-14	20 0 0	...	13,489
71	Do. flooring to flats, &c. . . . .				
72	Tiled roofing . . . . .	40,376	23 0 0	%	9,287
	<i>Fire-places.</i>				
73	Main block, &c. . . . .	46	20 0 0	each	920
74	East wing . . . . .	...	...	...	240
75	Kitchen-wing . . . . .	...	...	...	120
	<i>Rain-water piping and gutter, &amp;c.</i>				
76	Pipe stems L. feet .	3,978	1 8 0	1 ft.	5,967
77	Do. heads No. .	92	10 0 0	each	920
79	Bends " .	212	3 0 0	...	636
81	Gutters to eaves . . . . .	532	1 4 6	...	665
78	Shoes R 184 . . . . .	}	...	...	440
80	Pedestals „ 256 . . . . .				
					8,628
	Carried over .	...	...	...	...

## No. I—contd.

to date with sanctioned Estimate—contd.

As Executed.				Explanation by the Engineers of differences between estimate and actual expenditure.
Actual quantity to end of June.	Total estimated cost of completed work.	Comparison with estimate.		
		More.	Less.	
6	7	8	9	
	R			
...	...	...	...	
530.73	9,438	148	...	
...	198	...	...	
1,159	21,069	7,650	...	(70) Excess due to the extra area of roof covered in lead in lieu of tiles, to the extra thickness of lead used. Also to the extra cost of lead procured in a hurry from Bombay; the Secretary of State's supply not being sufficient. Also to all the lead work in pipes leading from gutters into rain water heads to the connections at bath outlets and to the lead sales to bath items which were not foreseen. The labour was a difficulty, and men being scarce, high wages had to be paid.
40,376	9,259	...	28	(72) There would have been a saving due to the substitution of lead for tiles in places, but owing to being obliged to put on the tiles while work on walls above them was going on, the renewal of broken tiles swallowed this up.
40	921	1	...	
} ...	360	...	...	
3,928	14,828	6,200	...	(76 to 80) The rain water pipes and gutters as provided in the original estimate were allowed to stand in the revised one, there then not being enough data to base an accurate estimate on; it was found when it came to providing the house with down-pipes, gutters, &c., that the original estimate was far below the mark.
92				
212				
532				
74				
...	...	...	...	There remains a large quantity of gutter and some down pipes as "materials at site" due to the omission of the verandah roofs.

Statement  
Part I.—Comparison of Expenditure

Number and description of sub-heads as per estimate.		AS PER ESTIMATE.			
		Quantity.	Rate.	Per.	Estimated cost.
1		2	3	4	5
	Brought over .	...	<i>R a. p.</i> ...	...	<i>R</i> ...
	<i>Water-supply, &amp;c.</i>				
87	Cold water main 2" . . .	}			
89	Ditto 1½" . . .				
88	Small service pipe . . .				
90	Junction with main . . .				
91	Bends in main . . .				
92	Ditto small main . . .				
93	Reducing junctions . . .				
94	Ordinary junctions . . .				
95	Hot water service main 2" . . .				
96	Ditto ditto 1½" . . .				
97	Small service pipes . . .		...	...	5,524
98	Junction with main . . .				
99	Bends in main . . .				
100	Ditto small room . . .				
101	Reducing junctions . . .				
102	Ordinary junctions . . .				
103	Hot water tanks . . .				
104	Cold water tanks . . .				
105	Waste pipes . . .				
106	Ball cocks, traps, valves, &c. . .				
107	Trapped discharges . . .				
108	Lightning conductor . . .	...	...	...	1,274
109*	Contingencies of items I, II and III	...	...	...	29,635
<i>Main-head II</i>	ALTERATIONS IN MAIN BUILDING.				
110	Extra windows in dining room . . .	...	...	...	378
111	Arches between ball-room and dining-room . . .	...	...	...	193
112	Arches between corridor and small dining-room . . .	...	...	...	276
113	Alteration to piers of east wall of ball-room . . .	...	...	...	94
114	Steward's room . . .	...	...	..	116
	Carried over .	...	..	...	...

No. I—contd.

to date with sanctioned Estimate—contd.

As Executed.				Explanation by the Engineers of differences between estimate and actual expenditure.																				
Actual quantity to end of June.	Total estimated cost of completed work.	Comparison with estimate.																						
		More.	Less.																					
6	7	8	9																					
...	...		...																					
...	5,513	...	11																					
...	1,440	166	...																					
...	30,900	1,265	...																					
				* <i>Note</i> .—The figure 29,635 is made up of the following items:—																				
				<table><tr><td colspan="3"></td><td>₹</td></tr><tr><td>Contingencies as main head</td><td>I . .</td><td>.</td><td>28,437</td></tr><tr><td>Ditto ditto</td><td>II . .</td><td>.</td><td>584</td></tr><tr><td>Ditto ditto</td><td>III . .</td><td>.</td><td>614</td></tr><tr><td colspan="3"></td><td><u>29,635</u></td></tr></table>				₹	Contingencies as main head	I . .	.	28,437	Ditto ditto	II . .	.	584	Ditto ditto	III . .	.	614				<u>29,635</u>
			₹																					
Contingencies as main head	I . .	.	28,437																					
Ditto ditto	II . .	.	584																					
Ditto ditto	III . .	.	614																					
			<u>29,635</u>																					
...	1,108	52	...																					
...	...	...	...																					

## Statement

## Part I.—Comparison of Expenditure

Number and description of sub-heads as per estimate.		AS PER ESTIMATE.			
		Quantity.	Rate.	Per.	Estimated cost.
1		2	3	4	5
	Brought over .	...	<i>R a. p.</i>		<i>R</i>
		...	...	...	...
115	Alterations to kitchen-wing base- ment . . . . .	...	...	...	4,897
116	Approaches and drains to kitchen- wing basement . . . . .	...	...	...	982
117	Glazing roof of gallery . . . .	...	...	...	4,000
	"				
118	Alterations to staircase roof at east end . . . . .	...	...	...	750
<b>Main-head III</b>	<b>ADDITIONAL WORKS ON MAIN BUILDING.</b>				
119	Laundry . . . . .	...	...	...	2,151
120	Drying room . . . . .	...	...	...	2,000
121	Wine cellar . . . . .	...	...	...	1,800
122	Serving room . . . . .	...	...	...	213
123	Plate room . . . . .	...	...	...	546
124	Basement floor . . . . .	...	...	...	2,426
125	Bakery . . . . .	...	...	...	2,492
126	Kitchen . . . . .	...	...	...	657
	<i>Scaffolding.</i>	...	...	...	...
	Surface drain kitchen wing . .	...	...	...	...
	Do. from water tank to khud below kitchen . . . . .	...	...	...	...
	Surface from servants' quarters to khud . . . . .	...	...	...	...
	Constructing retaining wall, south- west of Building . . . .	...	...	...	...
	Constructing retaining wall, north- east of Building . . . .	...	...	...	...
	Sanitary fittings . . . . .	...	...	...	...
	Viceregal Lodge and alteration and additional works on main Build- ing . . . . .	...	...	...	6,22,337
	Carried over .	...	...	...	...

## No. I—contd.

to date with sanctioned Estimate—contd.

AS EXECUTED.				Explanation by the Engineers of differences between estimate and actual expenditure.
Actual quantity to end of June.	Total estimated cost of completed work.	Comparison with estimate.		
		More.	Less.	
6	7	8	9	
	Rs.			
...	...	...	...	
...	4,629	...	268	(115 & 116) These two items should be taken together, slight excess over one more than balanced by saving on the other.
...	1,102	120	...	
...	6,620	2,620	...	(117) The estimate was framed on information received from the manufacturers. Recent information, however, shows that the cost will be over 50 per cent. in excess, and until details are received from England, the cause cannot be explained.
...	952	202	...	
...	2,156	5	...	
...	1,949	...	51	
...	1,734	...	66	
...	..	...	213	
...	...	...	546	
...	2,233	...	193	
...	1,736	...	756	
...	370	...	287	
...	2,481	2,481	...	<i>Scaffolding.</i> —This represents the difference between what was paid and what the materials are likely to sell for.
...	...	...	...	
...	...	...	...	
...	...	...	...	
...	...	...	...	
...	...	...	...	
...	420	420	...	<i>Sanitary fittings.</i> —It was originally intended to remove the sanitary fittings from the Old Lodge; this became impossible owing to its occupation by the Viceroy, and a certain amount had to be bought.
...	...	...	...	
...	...	...	...	

Statement  
Part I.—Comparison of Expenditure

Number and description of 'sub-heads as per estimate.		AS PER ESTIMATE.			
		Quantity.	Rate.	Per.	Estimated cost.
1		2	3	4	5
	Brought over . . .	...	R a. p.	...	R
<i>Main-head IV</i>	SUBSIDIARY BUILDINGS AND WORKS.				
	Servants' houses (one block) . . .	...	...	...	9,809
	Alterations, &c., to Observatory House . . . . .	...	...	...	5,369
	Alterations, &c., to Observatory Cot- tage . . . . .	...	...	...	828
	Approach roads . . . . .	...	...	...	6,692
	Out-houses for Observatory Cottage	...	...	...	1,990
	Laying out grounds. . . . .	...	...	...	20,000
	Cold watersupply . . . . .	...	...	...	7,729
	Lowering and clearing site . . . .	...	...	...	5,681
	Latrines . . . . .	...	...	...	680
	Road from south-west corner of Hill to new Lodge . . . . .	...	...	...	6,013
	Storage tanks for rain water . . .	...	...	...	8,052
<i>Main-head V</i>	RESERVE FOR UNFORESEEN RE- QUIREMENTS.				
	Electric Bells . . . . .	...	...	...	...
	Glazing of Band Porch . . . . .	...	...	...	...
	Alterations to door leading from Hall to small drawing room . . .	...	...	...	...
	Carving royal arms, &c. . . . .	...	...	...	...
	Additions to cow-house . . . . .	...	...	...	...
	Ditto to Dairy . . . . .	...	...	...	...
	Constructing a flag-staff . . . . .	...	...	...	...
	Carried over . . . . .	...	...	...	...

No. I—contd.

to date with sanctioned Estimate—contd.

As Executed.				Explanation by the Engineers of differences between estimate and actual expenditure.
Actual quantity to end of June.	Total estimated cost of completed work.	Comparison with estimate.		
		More.	Less.	
6	7	8	9	
	R			
...	...	...	...	
...	9,704	95	...	
...	5,297	...	72	
...	821	...	7	
...	15,072	8,380	...	<i>Approach Roads.</i> —Several large retaining walls were built in order to support the ground above and to form room for roads. The south road has also been provided with new railings from top to Guard House, the old railings when taken up being found too rotten. Some failures in the walls had to be made good.
...	...	...	1,990	
...	10,000	...	10,000	<i>Note.</i> —This saving of Rs. 10,000 is only nominal. The amount will be required to be spent subsequently.
...	7,678	...	51	
...	5,608	...	73	
...	626	...	4	
...	6,617	604	...	
...	13,084	5,032	...	<i>Storage Tanks.</i> —The excess is due to the drains built in order to protect the made ground below the kitchen wing and to lead the water from the house surface drains into the storage tanks. The cost of the work was rather high owing to its being done in the winter, the concrete having been destroyed by the action of the frost and had to be done over a second time.
...	1,290	...	...	
...	506	...	...	
...	470	...	...	
...	1,244	...	...	
...	749	...	...	
...	299	...	...	
...	459	...	...	
...	..	...	...	



## Statement

## Part I.—Comparison of Expenditure

Number and description of sub-heads as per estimate.		AS PER ESTIMATE.			
		Quantity.	Rate.	Per.	Estimated cost.
1		2	3	4	5
			<i>R a. p.</i>		<i>R</i>
	Brought over . . . . .	...	...	...	...
	Constructing a horse shelter for new Viceregal residence, Simla, for 60 horses . . . . .	...	...	...	...
	Constructing ice-pit at Observatory Hill for ditto . . . . .	...	...	...	...
	Constructing cow-shed . . . . .	...	...	...	...
	Vaulting below west face of ball- room, new Viceregal residence . .	...	...	...	...
	Accommodation for bandmen at Viceregal residence . . . . .	...	...	...	...
	Band gallery at new Viceregal re- sidence . . . . .	...	...	...	...
	Dismantling and re-erecting Dairy .	...	...	...	...
	Constructing steps through two re- taining walls on approach road to new Viceregal residence . . .	...	...	...	...
	Providing shields for the new Vice- regal residence . . . . .	...	...	...	...
	Fowl house . . . . .	...	...	...	...
	Removing gate to road at south end of guard room . . . . .	...	...	...	...
	New gate at Boileaugunge entrance to new lodge . . . . .	...	...	...	...
	Other works . . . . .	...	...	...	...
	Hayward's prism lights . . . . .	...	...	...	...
	Total Reserve for unforeseen requirements . . . . .	...	...	...	34,746
	Loss on stock . . . . .	...	...	...	...
	Total . . . . .	...	...	...	7,29,876
<i>Main-head VI</i>	Establishment. . . . .	...	...	...	1,20,000
<i>Main-head VII</i>	Tools and plant . . . . .	...	...	...	20,000
	GRAND TOTAL . . . . .	...	...	...	8,69,876

No. I—concl'd.

to date with sanctioned Estimate—concl'd.

As Executed.				Explanation by the Engineers of differences between estimate and actual expenditure.
Actual quantity to end of June.	Total estimated cost of completed work.	Comparison with estimate.		
		More.	Less.	
6	7	8	9	
	R			
...	...	...	...	
...	8,474	...	...	
...	2,618	...	...	
...	638	...	...	
...	5,351	...	...	
...	3,516	...	...	
...	841	...	...	
...	350	...	...	
...	1,155	...	...	
...	4,244	...	...	
...	883	...	...	
...	153	...	...	
...	522	...	...	
...	(a) 1,041	...	...	(a) This is put down for certain works which are all in hand.
...	(b) 6,201	...	...	(b) The cost of this cannot be met from savings as the excesses already incurred are greater than the savings effected in other sub-heads. The calculation of the cost of this is merely approximate as the total London charges have not yet been intimated.
...	41,104	6,358	...	
...	10,000	10,000	...	
...	8,02,050	1,02,216	29,842	= Rs. 72,374 excess.
...	1,57,000	37,000	...	} = Rs. 28,000 "
...	11,000	...	9,000	
...	9,70,050	1,39,216	38,842	= Rs. 1,00,374 "

**Statement No. II.**  
*Statement showing Expenditure and Liabilities on Furniture and Decorations for the new Vice-regal Residence.*

Item No.	Sub-heads.	Amount of sanctioned estimate.	Expenditure and Liabilities to July 1888 and subsequent months.	DIFFERENCE.		REMARKS.
				More.	Less.	
		R	R		R	
1	STATE ROOM FURNITURE, &c.	1,06,243	1,11,484	6,241	...	{ Item No. 1.—The difference is due to exchange between 1s. 6d. and actuals, and Rs 15 difference in estimated freight and actual charges. Item No. 3.—Excess due to under-estimating the freight and to replacing 2 baths broken.
2	ORDINARY ROOM FURNITURE, &c.	23,305	20,048	492	1,667	
3	Furniture, &c.	631	1,173	6	.....	
4	KITCHEN AND COOKS DEPENDENCIES.	3,260	3,260	.....	.....	
5	Fittings, &c.	5,437	3,121	.....	2,316	
6	SEWARDS' DEPENDENCIES AND LAUNDRY.	45,000	45,000	.....	.....	
7	MISCELLANEOUS.	5,937	10,459	522	.....	Item No. 7.—This excess is due to the slight extra charge for fittings on account of their extra stoutness. A large reserve remains as materials at site, and this might be brought on to stock, and thus item relieved.
8	Structural decorations	.....	.....	.....	.....	Item No. 8.—Excess is due to breakages in Maple and Co.'s mirrors at Simla, which had to be replaced locally.
9	Door and window fittings	600	819	219	.....	Item No. 9.—The excess is due to payments made (vide Public Works Department Nos. 243B and 253B, of 11th and 17th May 1886) to Hampton and Sons, Walker and Sons, and Morris and Norton, amounting to Rs 1,183-6-0 for freight charges on samples.
10	Mirrors	.....	.....	.....	.....	
11	Expenditure on samples	756	1,893	1,142	.....	
	Furniture reserve to recover, &c.	.....	.....	.....	.....	
	Furniture from old Lodge	2,000	500	.....	1,500	
	Putting up materials, laying carpets, unpacking, &c.	3,781	3,781	.....	.....	
	Total	2,00,000	2,02,149	7,622	5,473	
12	ADDITIONAL ITEMS.					
	Curtains, carpet and photographs	.....	4,600	4,600	.....	Additional articles have been ordered quite recently. The cost of these can be met from an additional sum of Rs 5,000 asked for in Statement V, see explanation in paragraph 2 of for.
	GRAND TOTAL	2,00,000	2,06,749	12,222	5,473	Excess Rs 6,749.

**Statement No. III.**  
*Electric Light Installation for new Viceregal Lodge, Simla.*

Item No.	Sub-heads.	Estimated cost sanctioned.	Total expenditure to June 1888.	Expenditure during July 1888.	Probable expenditure during subsequent months.	Total.	Difference.	REMARKS.
		R	£	£	R	£	R	
1	Engines and Boilers (£21,882)	27,480	26,080	...	...	26,080	...	
2	Dynamos, &c. (£22,907)	54,105	28,508	22,871	...	51,538	...	
3	Pendants, &c., and Mr. Massey's commission (£2700)	5,000	2,427	785	...	3,193	...	
4	Probable freight in England	86,585	77	...	9,173	80,761	(a) 5,323	(c) This sum will be required to meet the charge of £807 or Rs. 7,605 entered below against Item 11 when the details are known.
5	Superintendent's wages for 9 months	6,750	12,378	2,132	680	9,250	(c) 2,500	(c) Excess due to provision of Superintendent's salary for one month more in India, and for salary and passage-money during voyages from and to England, and travelling expenses in India.
6	Probable freight and carriage in India	25,000	7,184	447	2,368	15,141	9,858	
7	Probable cost of erection and installation, &c.	10,000	4,097	92	6,377	10,567	...	
8	Engine house, &c., including contingencies for same.	10,567	...	...	500	500	3,065	
9	Unforeseen items	4,453	73	...	1,500	1,573	5,063	
10	Contingencies for Items 1 to 7 and 9	6,840	...	...	(b) 7,605	7,805	7,005	(b) When the details of this are known, the distribution to the sub-heads concerned (presumably Items 1 to 4) will be made. See remarks above.
11	Expenditure advised from England (£807) by telegram from Secretary of State.	...	80,895	26,409	28,163	1,35,389	14,001	
	GRAND TOTAL	1,50,000						

## IRRIGATION.

No. 45 (Public Works), dated 29th June 1888.

From—The Government of India,

To—The Secretary of State for India.

We have the honour to forward, for Your Lordship's sanction, a scheme for the extension of the Western Jumna Canal towards Sirsa.

2. In paragraphs 23 and 24 of Section II, Chapter V, Part II of the Report of the Indian Famine Commission, published in 1880, it was said that "there are in the Punjab tracts where the construction of canals appears urgently necessary for famine protection; and others, at present lying waste and uncultivated, might be rendered culturable by conveying to them a supply of water, which it would not be difficult to draw from the great rivers of the country. Of the first class may be named the tract lying between the Jumna and Sutlej, in the Delhi and Hissar Divisions, which at present stands exposed to constant risk of drought, and is, in fact, the locality where in any year of deficient rainfall distress is soonest and most acutely felt. . . . Part of this tract will be protected by the Sirhind Canal when it is opened; but a large portion of it lies beyond the scope either of that or of the Western Jumna Canal, and no scheme has been framed for supplying it with irrigation at all seasons. But it has been proposed to enlarge the upper section of the Western Jumna Canal, and to draw from it a branch canal to carry into this district the surplus supply."

3. In January 1884, we asked the Government of the Punjab to prepare and submit an estimate for the extension of the Western Jumna Canal towards Sirsa for the irrigation of autumn crops, as recommended by the Famine Commission, and in reply to a reference made to us in March 1887, we requested that the proposed scheme might be submitted

(a) as a separate project, and

(b) as an adjunct of the main canal.

In reply, the Local Government submitted, in January last, the necessary plans and estimates, which we have now the honour of forwarding for Your Lordship's sanction.

4. The estimates provide for the improvement of the old main line of the Western Jumna Canal down to the head of the new main line at Indri, so as to enable it to carry the increased supply required for the branch, and for a branch 138 miles long, with the necessary distributaries, to irrigate the country on the left bank of the Sirsuti Nadi down to Sirsa.

5. The branch is primarily designed for the irrigation of the autumn crop, but there will, in ordinary years, be sufficient water in the river to prepare a considerable area for the spring crop; and in years when the demand during the winter months is slack on the old canal, the water, which would otherwise run to waste, could with great advantage be turned down the Sirsa branch.

6. The area commanded by the branch is 1,273 square miles, of which 918 square miles are in British territory and 355 square miles in the Native State of Patiala. The Patiala Durbar expressed a wish to contribute to the cost of the project, and the provisional conditions set forth in the correspondence which will be found among the enclosures were proposed to, and accepted by, the Durbar, so as to admit of the amount of the contributions being calculated and shown separately in the estimate.

7. The total cost of the project, including indirect charges, is estimated at Rs41,92,561, and the distribution between Imperial and Contributions is shown below :—

	Direct charges.	Indirect charges.	Total.
	Rs	Rs	Rs
Imperial . .	28,92,637	1,89,857	30,82,544
Contributions .	10,84,302	25,715	11,10,017

so that the Imperial share of the project is Rs30,82,544. In the Financial Statements, which only deal with the Imperial share of the project, it is estimated that ten years after completion the gross income of the branch from all sources will be Rs3,20,000. The charge against revenue for working expenses is calculated at Rs1,26,000, so that the net revenue will be Rs1,94,000, and the return on Imperial outlay, both direct and indirect, will be 6·3 per cent. The addition of the cost of the Sirsa branch to the Western Jumna Canal will raise the total capital of that project to Rs1,44,23,468. The net revenue of the whole canal, 10 years after the branch has been completed, is estimated at Rs9,52,000, which will give a return of 6·5 per cent. on the capital invested.

8. It will be seen that the scheme has been very fully discussed by the Financial Commissioner, Punjab, at different stages of its progress, and the figures of revenue may be safely accepted. The water-rates which it is proposed to levy are possibly capable of some enhancement, and certainly not less than the proposed rates will be taken. Even if not enhanced, they are sufficiently remunerative to justify the work, and we are distinctly of opinion that the project fulfils all the conditions for its admission to the category of Productive Public Works.

9. In requesting Your Lordship's sanction to the project, we may add that we cannot at present say when it will be possible for us to provide funds for its execution, but that whenever the funds are available, we propose to provide them conditionally on the Government of the Punjab accepting the financial responsibility for the scheme.

10. The accompanying note by the Inspector General of Irrigation fully discusses the project from both an engineering and financial point of view.

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[ENCLOSURE NO. 3 TO PUBLIC WORKS DEPARTMENT DESPATCH NO. 45 OF 1888.]

*Note by COLONEL R. HOME, R.E., Inspector General of Irrigation, on the Estimate for a Branch Canal from the Western Jumna Canal to Sirsa.*

As stated in the opening paragraphs of the Chief Engineer's report on this estimate, the Sirsa Branch, which had been included in the original proposals for the remodelling of the Western Jumna Canal, was, by order of the Government of India in 1874, omitted from the scheme finally submitted for the sanction of the Secretary of State.

It was considered that the defects of the existing canal should first be removed before any proposal for the extension of irrigation should be entertained.

The necessity for irrigation, as a protection in seasons of drought, in the tract of country lying west of Kurnal, was strongly urged by the Indian Famine Commission.

In 1884, when the remodelling works were well advanced, the project for the Sirsa Branch was again taken in hand, and the result is the estimate now under consideration.

The proposals that were submitted in 1871 contemplated the construction of a main channel from Indri (as in the present project) with several branches to carry an aggregate supply of 1,800 cubic feet per second. The estimate for this scheme was in many respects imperfect, and on completing the project according to the rules now in force, it was found that the cost was excessive, and that to enable the Western Jumna Canal to carry such a large extra supply, extensive remodelling would be required both to the channel and to the torrent works at Dadupur. Besides the great cost, it also appeared inadvisable to contemplate such large alterations, the construction of which would necessarily entail considerable interference with the irrigation from the existing canal.

After careful consideration it was found that an extra supply of 1,200 cubic feet per second could be passed down the upper part of the canal without entailing any further alterations than had already been proposed in 1882, for preventing excessive silting of the new main line. The works now proposed are not extensive, and can be carried out without interfering with existing irrigation.

The cost of this part of the scheme for "works" alone is estimated at page 65 of the book at Rs. 19,152, which comprises the cost of the works detailed at paragraphs 8 and 20 on pages 2 and 5 of the Chief Engineer's Report.

The alignment of the Sirsa Branch differs from that proposed in 1870, in so far as it is based upon more careful and detailed surveys, and on a better knowledge of the country. Its length is 138 miles. The subsidiary channels have been designed to distribute the water equally on the three sections into which the branch has been divided, the result being that 21.5 per cent. of the area actually commanded will be irrigated. The aggregate length of distributaries is 528 miles. The cost of the branch under the head "Works" is given by the Chief Engineer in his note reviewing the estimate as—

	R
Construction of Branch . . . . .	15,26,122
Ditto Distributaries . . . . .	11,61,600
	<hr/>
TOTAL WORKS . . . . .	26,87,722
	<hr/>

It may here be noted that the detailed estimates and figured statements on pages 44 to 69 of the printed collection refer to the estimate as revised by the Chief Engineer in his note on pages 24 to 33.

The project as now submitted contemplates the allotment of a portion of the discharge of the branch to the pergunnah of Nirwana, which belongs to the Native State of Patiala. It will be seen from the index map that this patch of foreign territory stretches across the line of any canal that can be made in this direction. Owing to depth of wells and deficient rainfall, agriculture is as backward here as in the British districts traversed by the canal; and the Patiala Durbar at one time even enquired whether it would be possible to take part of the water of the Sirhind Canal across the Guggur river, for the purpose of mitigating the nearly chronic distress of the inhabitants of their outlying pergunnah. It seems fair that an adequate portion of the discharge of the branch should be allotted to this tract. The terms on which the supply might be given are sketched in the letter from the Punjab Government on page 70, and seem to be equitable. They are based on the agreement with the Native States who con-

tributed to the Sirhind Canal, to which the Patiala State was the largest contributor. The terms proposed have been gratefully accepted by the State (see their letter on page 72), and judging from the satisfactory manner in which the agreement about the Sirhind Canal has been carried out by the Patiala State, there is no reason to fear that any complications will arise from a similar arrangement in the case of this project.

The manner in which the division of charges is made between the British Government and the Patiala State is explained in the letter from the Punjab Government before alluded to, and the result is shown in Appendix C at page 65. The proposed distribution appears to have been made in a plain and workable manner that will not be open to cavil or misconception. It should be noted, however, that it is not contemplated to make any charge to the State for a share of the cost of the channel or works at present existing on the main canal, above the head of the Sirsa Branch. Perhaps it would be undesirable to do so; the division would have to be made on the basis of the portion of full discharge of the canal allotted to the Patiala State, and would amount to  $\frac{335}{4,000}$  of the sum shown in the general abstract on page 19, under head "Works" and old sanction. I would, however, draw attention to paragraph 5 (a) of the Punjab letter (page 71), where it is stipulated that the State shall pay a share of the maintenance of these works. I think that, perhaps, the division of charges as made by the Punjab Government may be allowed to stand.

The works proposed are all of the ordinary type, and call for no particular remark. The Regulator at the head of the Sirsa Branch is, however, a peculiar design. I think the result would be attained, and the water more quietly delivered, if every alternate long pier-wall were interrupted as I have shown in pencil, and the arches of the bridge made to span two of the original bays.

All the works have been designed in the most economical manner and have been carefully considered, and, where necessary, modified by the Chief Engineer in his note (pages 24 to 33). The new works on the main canal include two locks: one in connection with the new weir on the Dholra diversion, and the other at the existing Indri Regulator. With reference to these works it may be noted that the canal has always been navigable for boats. There is a certain amount of traffic in produce and materials, and a very considerable traffic in timber from the Dun forests, which enters at the canal head and is delivered at Hissar and Dehli. The bridges on the Hansi Branch have lately been fitted with movable platforms to facilitate the traffic on the Hansi Branch. There is a Navigation Company with headquarters at Dehli: they run a regular service of passenger steamers on the remodelled portion of the canal, and are anxious to extend the service to meet the North-Western Railway at Jugadri. The two locks are necessary to maintain the present navigation, and there is no doubt that traffic will be generally facilitated by the improvements included in the estimate for this project.

The rates for the different classes of work are the same as those actually paid on the remodelling of the Western Jumna Canal, which has lately been completed, and they may be accepted.

The cost of the distributaries is based on a mileage rate deduced from the actual cost of distributaries from the new Dehli Branch, where the construction was a good deal interfered with by the necessity for maintaining existing irrigation. The rate may therefore be considered full and not likely to be exceeded.

The rates proposed for irrigation are the same as those now in force on the parent canal, and call for no remark.



Abstracts of estimate and financial statements have been prepared (pages 15 to 23 and 64 and 65) for the project as a separate scheme, and as an addition to the sanctioned estimates of the Western Jumna Canal. In both cases, only the share of the cost debitable to "Imperial" has been taken into account. The estimate for the new works now proposed and debited to the Sirsa Branch project under the heads of "Imperial" and "Contributions" are as follows:—

	Direct charges.	Indirect charges.	Total.
	₹	₹	₹
Imperial . .	28,92,687	1,89,857	30,82,544
Contributions .	10,84,802	25,715	11,10,017
Total .	<u>39,76,989</u>	<u>2,15,572</u>	<u>41,92,561</u>

It is estimated that, ten years after completion, the gross income of the Branch from all sources will be ₹3,22,000. A rate of ₹1 per acre has been fixed as the cost of maintenance. Under the circumstances of the Branch, which will not, as a separate project, bear any share of the cost of maintaining the river and head works, or of the repairs of the main canal, I think this provision will be sufficient; it will give a yearly charge against revenue of ₹1,26,000. The net revenue will then be ₹1,94,000, and the return on Imperial outlay, both direct and indirect, will be 6.29 per cent.

The addition of the cost of the Sirsa Branch to the estimate of the Western Jumna Canal will raise the total capital of that work to ₹1,44,23,468. The net revenue of the whole canal ten years after the Branch has been completed is estimated at ₹9,52,000, which will give a return on the total capital invested of 6.57 per cent.

The Financial Commissioner in his note on page 9 expresses entire approval of the project, and considers that the expectations of revenue are moderate and fully justified by experience.

The Honourable the Lieutenant-Governor approves of the project, and desires that its execution may not be delayed. We may concur in his recommendation that the project may be classed as a Productive Public Work.

No. 69 (Public Works), dated 31st August 1888.

From—The Government of India,

To—The Secretary of State for India.

In continuation of our Despatch No. 45 P.W., dated the 29th June 1888, we have the honour to forward, for Your Lordship's sanction, an estimate for the construction of the Jhelum Canal, a project for the irrigation of the lands between the Jhelum and the Chenab rivers in the Punjab, known as the Jach Doab.

2. In December 1883, the Government of the Punjab addressed us on the subject of the improvement and extension of irrigation in the Shahpur District. The correspondence which resulted in the submission by that Government in November last of the present scheme, will be found in the book of estimates forwarded herewith.

3. The original proposal was to construct an inundation canal taking off from the Jhelum river near a place called Chak Nizam, about 25 miles below the point where the river emerges from the gorge formed by the Jhelum Salt Range on the right and the Pabbi hills on the left bank of the river. A contour survey of the Doab between the Jhelum and Chenab rivers was made, and a project for

the proposed inundation canal was prepared; but the surveys showed so distinctly the advantages that would be gained by placing the head of the canal higher up the river and by making the canal perennial, that the inundation scheme was abandoned, and the project as now submitted provides for a perennial canal from the left bank of the Jhelum, near Rasul, with a weir across the river at its take off.

4. The general report on the project by Major J. W. Ottley, R.E., which accompanies the estimate, gives an excellent account of the tract which is to be irrigated by the proposed canal. The greater portion of the area commanded is exceedingly fertile, and would amply repay cultivation if water were available; but as the only available supply is from wells which are not only 60 to 90 feet deep, but which often yield brackish water, the land is at present an uncultivated waste, and is only used as a grazing ground for cattle. The Financial Commissioner of the Punjab is of opinion that agriculture can scarcely exist on this vast stretch of naturally fertile soil, unless supported by irrigation.

5. The River Jhelum, from which the supply for the proposed canal is to be drawn, is snow-fed; its minimum discharge at the site selected for the head of the canal is said to be 5,900 cubic feet per second. An ample supply of water can therefore be always counted upon. The rainfall, as ascertained from the records, averages less than 12 inches throughout the district, is often far below this, and rarely, if ever, exceeds 18 inches at any single point in any one year. There will be, according to the Financial Commissioner, no difficulty in providing settlers for the land wherever water can be given. These conditions appear to be very favourable to the success of an irrigation scheme.

6. The Government of the Punjab estimated the cost of the project at Rs 1,22,70,516.\* We have considered it advisable to raise the total amount to Rs 1,25,26,676, as shown below, by adding Rs 2,50,000 to the direct and Rs 6,160 to the indirect outlay:—

* Direct charges.	Rs 1,17,74,068
Indirect „	4,96,448
<b>TOTAL</b>	<b>1,22,70,516</b>

Direct charges	Rs 1,20,24,068
Indirect „	5,02,608
<b>TOTAL</b>	<b>1,25,26,676</b>

The accompanying note by Colonel R. Home, R.E., Inspector General of Irrigation, fully discusses the Engineering and Financial aspects of the project, and gives in detail the reasons for the additions made to the estimated outlay.

7. The financial statements appended to the estimate have been accepted by the Financial Commissioner of the Punjab, and appear to have been drawn up with great care, and certainly with moderation, as far as the estimated net returns are concerned. According to the amended statements embodying the alterations made by the Inspector General of Irrigation, which we have caused to be prepared, it is contemplated that the canal will be completed in ten years from date of commencement, and will begin to earn revenue in the seventh year. Ten years after completion the balance of interest charges will amount to

Rs 1,25,26,676
83,61,219
<b>1,58,87,895</b>

Rs 33,61,219. The sum at charge will then become Rs 1,58,87,895,† on which the estimated net revenue of Rs 9,87,944 will yield a return of 6·2 per cent. The net direct revenue alone of Rs 8,24,944 will give a return of 5·2 per cent. The enclosed revised forecast statements show how these results are arrived at.

8. We have no hesitation in recommending the project for Your Lordship's sanction as a Productive Public Work.

As regards provision of funds and the question of financial responsibility as between the Imperial and Local Government, we will address Your Lordship subsequently.

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[ENCLOSURE NO. 3 TO DESPATCH NO. 69 PUBLIC WORKS OF 1888.]

*Note by COLONEL R. HOME, R.E., Inspector General of Irrigation, on the Jhelum Canal Project.*

This project has been very carefully prepared, and full explanation has been given for the location of the canal, the cost of the works, and the manner in which the returns for the expenditure are arrived at.

The scope of the project has been considerably extended, and the position of the canal head altered since the scheme was first proposed to the Government of India in Punjab letter No. 5839 I., dated 6th December 1883. The necessity for these alterations are fully detailed and discussed in the reports now submitted; and I think there can be no doubt that the reasons given for placing the head of the canal at the highest point on the Jhelum from which water can be taken out, and for constructing a weir to ensure a constant supply during the cold weather, are good and may be accepted. The arguments in favour of the revised proposals are—

- (a) The area under command is now 1,323 square miles instead of 700.
- (b) The river at Rasul is confined by the spurs of the Salt Range on the right and by the end spur of the Pabbi hills on the left bank; whilst at Chak Nizam, although, for some reasons unknown, the river has for many years kept in its present channel, yet there is apparently nothing to prevent its shifting either to right or left. The latter site is good enough for an inundation canal of moderate capacity, but not for a permanent canal.
- (c) The necessity for ensuring irrigation for a rabi crop in a tract where wells are deep and rainfall scanty and uncertain, and the impossibility of attracting population except under this condition.
- (d) The construction of a weir and permanent head-works will be remunerative, and Rasul is the only site at which they can be economically constructed.

The canal as now designed consists of a main line 78 miles long, three branches aggregating 83 miles in length, and 569 miles of distributary channels. Of the main line, 23 miles are of the nature of a supply-channel running parallel to the River Jhelum, and on this length there are two escapes into the river; the upper one, which is situated at the 6th mile, will be used as a scouring sluice, to get rid of the silt that must deposit during floods in the vicinity of the canal head.

Beyond the 23rd mile irrigation will commence, and distributaries will be constructed from suitable points on the main line and branches; their positions are indicated on the plans. The supply-channel is carried along the foot of the slope from the high land to the river bank, and the drainage from this slope is for the most part received into the canal and passed out at the Mallakwal escape at mile 23. At Mallakwal the canal line leaves the river and takes a more southerly direction: following the contours of the country it reaches the crest at the 40th mile, and after giving off the Kot Moman Branch to the left it follows

the main ridge, and where this fails the eastern and western branches occupy the divided crest. The lengths of the branches are: Kot Moman,  $25\frac{1}{2}$  miles; eastern branch, 29; and western branch,  $28\frac{1}{2}$  miles. Owing to the nature of the ground and the scanty rainfall, the drainages are none of them large or formidable, and the slope and general conformation of the country is very favourable for the construction and working of an irrigation canal; so much so, indeed, that the whole of the country commanded may be assumed to be also irrigable. The soil is good and the springs deep, whilst the rainfall is scanty and uncertain.

The lowest discharge of the River Jhelum as yet measured is 5,900 cubic feet per second.

The canal is designed to carry 2,875 cubic feet per second at its head for the irrigation of 423,360 acres, which is half the area commanded.

The supply proposed is in excess of these requirements, but as it is most probable that a much larger proportion than 50 per cent. of the country will be irrigated, and it may also be found possible to extend the irrigation beyond the limits at present proposed, it will be advisable not to reduce the capacity of the main canal until it has been shown by further investigation that this can be safely done, and that any additional supply that may be hereafter required can be safely carried in a channel of smaller section. The head-works have been designed to carry the full supply, and it is not probable that a reduction of 375 in a total of 2,875 cubic feet per second will make any appreciable saving on their cost. As now designed by the Chief Engineer, they will, I think, be safe and efficient, but I am of opinion that he has not made sufficient allowance for unexpected difficulties; his estimate is necessarily open to criticism, as it is not based on examination of the subsoil, nor has the work been actually laid out on the ground. The rates, judging from similar work actually carried out elsewhere, are fair and reasonable, but the quantities are, for the reasons stated above, very much open to revision. I should be inclined to add to his estimate of Rs16,56,000 a lump sum that will bring it up to Rs20,00,000. Bridges have been provided generally at a distance of three miles apart, though additional crossings have been provided by arching between the piers of the canal falls. I think the class of bridges proposed, generally spans of 10 feet, will be very unsightly over wide channels; they have been adopted as the most economical type, but I am of opinion that the design will have to be modified in many cases, and as this would add to the cost of those bridges that may be altered, I would allow the provision under the head "Bridges" on the whole canal to stand, the rather as the sections of masonry in the designs submitted are rather scanty, and the height of the piers gives an insufficient provision for a possible addition to the depth of water which may be desirable hereafter.

The only other point that would sensibly affect the estimate is the rate of provision for distributaries. This has been finally laid down by the Chief Engineer as Rs3,500 per mile. Major Ottley, the Superintending Engineer, judging from the cost of some distributaries which had been constructed on the Chenab Canal, thought that after including the cost of minor distributaries the rate per mile for major distributary should be taken at Rs4,000. On the Sirhind Canal, I find that, roughly, the rate has been less than Rs3,000, the average mileage being six of major to seven of minor channel. It must, however, be remembered that labour is dearer the farther north we go, and that this is anticipated generally for this canal may be seen by reference to the table of rates. On the whole, perhaps, it would be well to accept Rs3,250 as a fair rate per mile, which will give a saving of  $1\frac{1}{2}$  lakhs on the estimated figure of Rs19,91,500.

The only alterations then that I would recommend in the figures of the estimate are—

	R
Head-works . . . . .	+ 3,44,000
Distributaries . . . . .	— 1,42,500
	<hr/>
Net increase . . . . .	2,01,500

or, in round numbers, 2 lakhs of rupees. I am not prepared to recommend any reduction of rates of work to cover this excess. I entirely agree with the local officers that the rates proposed are none too high if the work (as all remunerative works should be) is to be completed in reasonable time, and to be carried on continuously without reference to seasons.

Further criticism on the details of the project and designs for works is not called for. Establishment charges have been reckoned at 23 per cent. on the cost of works. It would have been satisfactory if a schedule of establishment had been put up, but the above percentage has been proved to be sufficient in so many cases that it may be accepted. The addition of 2 lakhs to cost of works will add *R*46,000 to the establishment charges, and *R*6,000 to the provision for ordinary tools and plant. Under special tools and plant, the provision of *R*4 lakhs to cover the cost of 12 miles of railway with rolling-stock and workshop tools does not appear extravagant. The indirect charges call for no remark.

The additions that I have made to the direct charges will now amount to *R*2,50,000 in round numbers.

As regards *Receipts*, they have been considered in much detail by the Chief Engineer in a separate memorandum. Judging from actual progress made in the development of irrigation on canals that have been opened in recent years, the forecast for this canal is very moderate indeed.

The average crop-rate is deduced from the actuals for five years on the Bari Doab Canal, where the rates are not as high as on some other canals; and indeed the proposed rate of *R*3·3 per acre is only a decimal higher than the charge made by the owners of private inundation canals in the same district (Shahpur).

I think that it was wrong to estimate miscellaneous receipts at *R*80,000 on the basis of actuals of the Bari Doab Canal, the circumstances of which are peculiar, owing to the number of large commercial centres in that Doab; it would be safer, in my opinion, to reduce this item to *R*50,000.

The forecast of progress and the average rate per acre are also discussed by the Financial Commissioner (Colonel Wace) in a note in which he reviews the whole circumstances of the Canal, and expresses entire approval of the project.

He considers the Chief Engineer's expectations moderate, and points out that the agriculturists will not after some time be satisfied with the irrigation of 50 per cent. of the culturable land, and that in a tract where the rainfall is so scanty and uncertain that crops cannot be grown without irrigation, the yearly irrigated area may rise to even 80 per cent.

There is no reason why the canal should not irrigate an area considerably larger than has been estimated. The channels are designed to carry 375 cubic feet more than is required for the yearly irrigation of 423,860 acres, with a duty of 50 acres in the kharif and of 120 acres in the rabi seasons. This extra water is sufficient for the irrigation of 63,750 acres, and, moreover, there appears to be no reason why, when necessity arises, a greater depth of water should not be passed into the canal. It may also be expected that the cultivators will econo-

mise water if they wish to extend the area under crop. It may then be expected that the ultimate area of irrigation will considerably exceed that for which credit has been taken in the estimate.

Colonel Wace in his note has proposed a charge of 8 annas per acre on the irrigated area, and the proceeds have been included in the Financial Statement on page 7. I understand this charge to be of the nature of an owner's rate to which there will probably be no objection.

The credit, however, which Colonel Wace proposes to give to the canal in subsequent paragraphs of his note, and which are shown in column 4 of the Financial Statement III on page 7 as "interest at 4 per cent. on sales of Crown lands," cannot properly be taken into account as indirect revenue; doubtless the money would never be earned if the canal were not made, but it appears to me that the credit, if it could be allowed, should rather be a decrease to the capital account of the canal than an increase to its revenue.

The charges against revenue have, in my opinion, been pitched at a very high figure. On the Bari Doab Canal the large sums detailed in the Chief Engineer's note were spent on what was practically a remodelling of the canal and river works, new works were interpolated, old works altered and strengthened, and the canal so much improved that it now carries with safety one third more water than it did before this remodelling was taken in hand. The system of estimating the maintenance charges by a rate per acre irrigated is the best that we have been able to devise, but we are fully aware that it is only a feeble approximation. The rate per acre on the Sirhind Canal in 1886-87, when the irrigation was less than half of the ultimate area, was only R1.11. I should not be surprised if it were found in future years that the yearly charges against revenue for this project have been overestimated by at least a lakh of rupees. To sum up—

		R
The direct and indirect capital of the canal as proposed by the Punjab is . . . . .		1,22,70,516
Paragraph 7 of forwarding letter.		
To which I propose to add—		
Direct . . . . .		2,50,000
Indirect . . . . .		6,160
To Revised Capital . . . . .		<u>1,25,26,676</u>
Direct and indirect receipts as proposed by Punjab to end of 1907-08 . . . . .		R 1,09,01,008
Deduct—Direct R73,000. Indirect R1,27,008 . . . . .		<u>2,00,008</u>
Revised Receipts, direct and indirect . . . . .		1,07,01,000
Deduct—Revenue charges R67,78,105. Interest R72,84,114. . . . .		<u>1,40,62,219</u>
Excess of Interest over Revenue receipts . . . . .		<u><u>33,61,219</u></u>

The sum at charge will then be R1,58,87,895, on which a net revenue of R9,87,944 (ten years after completion of the canal) will yield a return of 6.2 per cent., whilst the net direct revenue alone of R8,24,944 will give a return of 5.2 per cent. I consider the project to be a very promising one which may well be classed as a Productive Public Work, and put in hand whenever funds are available for its construction.

[ENCLOSURE No. 4 TO DESPATCH No. 69 (PUBLIC WORKS) OF 1888.]

## Forecast statements as amended by the Government of India.

## JHELUM CANAL.

## No. I.

*Summary of the estimated Direct charges to Capital Account.*

1	2	3	4	5	6	7	8
Years.	Works.	Establishment.	Tools and Plant.	Suspense.	Loss by exchange on payments in England.	Receipts on Capital Account.	Total.
	₹	₹	₹	₹	₹	₹	₹
First . . .	3,35,000	1,00,000	1,65,000	..	...	...	6,00,000
Second . . .	6,59,000	1,65,000	1,76,000	...	...	...	10,00,000
Third . . .	11,40,000	2,70,000	1,40,000	50,000	2,000	...	16,02,000
Fourth . . .	12,45,000	2,70,000	35,000	50,000	...	...	16,00,000
Fifth . . .	12,45,000	2,70,000	35,000	50,000	4,000	...	16,04,000
Sixth . . .	12,90,000	2,75,000	35,000	...	...	...	16,00,000
Seventh . . .	10,47,000	2,25,000	28,000	...	4,000	...	13,04,000
Eighth . . .	9,74,000	2,00,000	28,000	...	...	...	12,00,000
Ninth . . .	7,35,000	1,50,000	15,000	...	4,068	...	9,04,068
Tenth . . .	5,10,661	1,09,037	10,570	...	...	20,268	6,10,000
TOTAL .	61,80,661	20,34,037	6,65,570	1,60,000	14,068	20,268	1,20,24,068

## No. II.

*Summary of the estimated Indirect charges to Capital Account (excluding interest).*

1	2	3	4
Year.	Capitalization of Land Revenue abated.	Charges for Leave and Pension allowances.	Total.
	₹	₹	₹
First . . . . .	60,000	14,000	74,000
Second . . . . .	50,000	23,100	73,100
Third . . . . .	40,000	37,800	77,800
Fourth . . . . .	30,000	37,800	67,800
Fifth . . . . .	20,000	37,800	57,800
Sixth . . . . .	10,000	38,500	48,500
Seventh . . . . .	5,000	31,500	36,500
Eighth . . . . .	2,843	28,000	30,843
Ninth . . . . .	...	21,000	21,000
Tenth . . . . .	..	15,265	15,265
TOTAL . . . . .	2,17,843	2,34,765	5,02,608

## JHELMUM CANAL.

## No. III.

*Estimated growth of Irrigation, Revenue and Charges.*

YEARS.	Irrigated area at end of year.	REVENUE RECEIPTS.				Charges direct and indirect against Revenue Accounts.	NET REVENUE DUE TO WORKS.	
		Direct Receipts, vide No. III A.	Indirect Receipts.		Total.		Including Enhanced Land Revenue.	Excluding Enhanced Land Revenue.
			Enhanced Land Revenue.	Interest at 4 per cent. on sales of Crown lands.				
1	2	3	4	5	6	7	8	9
	Acres.	₹	₹	₹	₹	₹	₹	₹
Seventh .	33,000	23,000	...	...	23,000	2,02,320	-1,79,320	-1,79,320
Eighth .	60,000	75,500	...	...	75,500	2,83,755	-2,08,255	-2,08,255
Ninth .	93,000	1,48,750	...	...	1,48,750	3,65,783	-2,17,033	-2,17,033
Tenth . (Canal completed.)	131,000	2,58,750	...	...	2,58,750	4,48,913	-1,90,163	-1,90,163
Eleventh .	176,000	3,81,500	...	...	3,81,500	5,31,578	-1,50,078	-1,50,078
Twelfth .	212,000	5,12,250	16,500	...	5,28,750	5,35,321	-6,571	-23,071
Thirteenth	250,000	6,46,000	30,000	...	6,76,000	5,39,153	1,36,847	1,06,847
Fourteenth	289,000	7,83,750	46,500	...	8,30,250	5,43,106	2,87,144	2,40,644
Fifteenth .	326,000	9,13,250	65,500	...	9,78,750	5,46,811	4,31,939	3,66,439
Sixteenth .	382,000	10,42,750	88,000	...	11,30,750	5,50,516	5,80,234	4,92,234
Seventeenth	396,000	11,58,250	1,06,000	...	12,64,250	5,53,981	7,10,269	6,04,269
Eighteenth	404,000	12,54,750	1,25,000	...	13,79,750	5,56,876	8,22,874	6,97,874
Nineteenth	416,000	13,31,750	1,44,500	...	14,76,250	5,59,186	9,17,064	7,72,564
Twentieth.	423,360	13,85,750	1,63,000	...	15,48,750	5,60,806	9,87,944	8,24,944

N.B.— In column 5 credit has been taken by the Punjab Government of ₹1,27,008, being the amount of interest up to 1907-08 (commencing from 1903-04) at 4 per cent. on ₹7,05,800 on account of sales of Crown lands. The figures are omitted in this amended statement; this matter is referred to in the note by the Inspector General of Irrigation.



## JHELUM CANAL.

## No. III A.

Statement showing estimated Receipts from the working of the Jhelum Canal.

YEARS.	ESTIMATED AREA IRRIGATED YEARLY.			DIRECT RECEIPTS FROM WATER RATE.							Miscellaneous Receipts.	Total.	GRAND TOTAL.
	Total.	Kharif.	Rabi.	Kharif.			Rabi.			Acres.			
				At R2.	At R2.	At R4.	At R1-8.	At R1-8.	At R3.				
	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Acres.	Rs	Rs	Rs
Seventh	38,000	10,000	23,000	10,000	...	...	23,000	...	...	20,000	3,000	23,000	23,000
Eighth	60,000	17,500	42,500	7,500	10,000	...	19,500	...	...	69,500	6,000	75,500	75,500
Ninth	93,000	27,500	65,500	10,000	7,500	10,000	23,000	19,500	23,000	1,38,750	10,000	1,48,750	1,48,750
Tenth	131,000	38,500	92,500	11,000	10,000	17,500	27,000	23,000	42,500	2,44,750	14,000	2,58,750	2,58,750
Eleventh	176,000	52,000	124,000	13,500	11,000	27,500	27,000	23,000	65,500	3,61,500	20,000	3,81,500	3,81,500
Twelfth	212,000	62,500	149,500	10,500	13,500	38,500	31,500	27,000	92,500	4,86,250	26,000	5,12,250	5,12,250
Thirteenth	250,000	73,500	176,500	11,000	10,500	52,000	25,500	31,500	124,000	6,14,000	32,000	6,46,000	6,46,000
Fourteenth	289,000	85,000	204,000	11,500	11,000	62,500	27,000	25,500	149,500	7,45,750	38,000	7,83,750	7,83,750
Fifteenth	326,000	96,000	230,000	11,000	11,500	73,500	27,500	27,000	176,500	8,69,250	44,000	9,13,250	9,13,250
Sixteenth	362,000	106,500	255,500	10,500	11,000	85,000	26,000	27,500	192,500	9,92,750	50,000	10,42,750	10,42,750
Seventeenth	386,000	113,500	272,500	7,000	10,500	96,000	25,500	26,000	204,000	11,08,250	50,000	11,58,250	11,58,250
Eighteenth	404,000	119,000	285,000	5,500	7,000	1,06,500	17,000	25,500	230,000	12,04,750	50,000	12,54,750	12,54,750
Nineteenth	416,000	122,000	294,000	3,000	5,500	1,13,500	12,500	17,000	255,500	12,81,750	50,000	13,31,750	13,31,750
Twentieth	423,360	124,000	299,360	2,000	3,000	1,19,000	9,000	12,500	272,500	13,35,750	50,000	13,85,750	13,85,750

## JHELMUM CANAL.

## No. IV.

*Estimate of Financial results up to ten years after date of completion.*

1	2	3	4	5	6	7
YEAR.	Direct Capital outlay during the year.	Direct Capital outlay to end of year.	Simple interest at 4 per cent. on Capital outlay to end of previous year plus $\frac{1}{2}$ outlay during year	Net revenue from column 8 of Statement No. III.	Simple interest less net revenue.	Net revenue less simple interest.
	R	R	R	R	R	R
Up to end of sixth . . .	...	80,06,000	8,24,520	...	8,24,520	...
For seventh . . .	13,04,000	93,10,000	3,46,320	-1,79,320	5,25,640	...
Eighth . . .	12,00,000	1,05,10,000	3,96,400	-2,08,255	6,04,655	...
Ninth . . .	9,04,068	1,14,14,068	4,38,481	-2,17,033	6,55,514	...
Tenth . . .	6,10,000	1,20,24,068	4,68,763	-1,90,163	6,58,926	...
Eleventh . . .	...	1,20,24,068	4,80,963	-1,50,078	6,31,041	...
Twelfth . . .	...	1,20,24,068	4,80,963	-6,571	4,87,534	...
Thirteenth . . .	...	1,20,24,068	4,80,963	1,36,847	3,44,116	...
Fourteenth . . .	...	1,20,24,068	4,80,963	2,87,144	1,93,819	...
Fifteenth . . .	...	1,20,24,068	4,80,963	4,31,939	49,024	...
Sixteenth . . .	...	1,20,24,068	4,80,963	5,80,234	...	99,271
Seventeenth . . .	...	1,20,24,068	4,80,963	7,10,269	...	2,29,306
Eighteenth . . .	...	1,20,24,068	4,80,963	8,22,874	...	3,41,911
Nineteenth . . .	...	1,20,24,068	4,80,963	9,17,064	...	4,38,101
Twentieth . . .	...	1,20,24,068	4,80,963	9,87,944	...	5,06,981
Balance of interest charges .					46,74,789	16,13,570
					33,61,219	...



## **SECTION VII.**

### **Coal, Petroleum, and Iron.**

- 1. Dandote Coal.**
- 2. Punjab Oil-Lands.**
- 3. Beluchistan Petroleum Operations.**
- 4. Barrakur Iron Works.**



## COAL, PETROLEUM, AND IRON.

## 1.—Dandote Coal.

*Minute on the Dandote Colliery by the HON. SIR THEODORE C. HOPE, K.C.S.I., dated 12th December 1887.*

At the conference held at Khewra on 1st April 1886, at which I was present, the principal conclusions formed were (1) that the Dandote seams should be worked in preference to those at Chittadund; (2) that the investigations into the extent of the seams should be continued, and the quality of the coal further tested by chemical analysis and actual experiment on the North-Western Railway; (3) that the advice of a competent mining expert should be obtained as to the best system of working the seams; (4) that the coal should be conveyed by means of a series of wire-rope inclines to the foot of the hill, and thence to the railway by a short branch line; (5) that the colliery should be placed under the Director of the North-Western Railway (Colonel Conway-Gordon), and worked as an ordinary manufacturing account of the line.

2. I inspected the colliery works on the 23rd ultimo in company with Mr. R. B. Buckley, the Under-Secretary to the Government of India in the Civil Works Branch (which includes coal, petroleum, and iron); Mr. Henderson, the Engineer-in-charge; and Colonel Wallace, who is now Director of the North-Western Railway. The following record of the result may be useful.

3. In the first place, the investigations into the extent of the seams have been actively prosecuted. Coal having been proved by one of the shafts sunk from the surface of the plateau, this method of investigation was discontinued. The drifts on the western face having reached seams 30 inches thick, and new drifts on the southern face entering coal readily of 30 to 33 inches in thickness, attention was concentrated on the northern scarp of the plateau with results showing a 36-inch seam, and otherwise so satisfactory that this locality has been finally chosen for the principal workings of the colliery, to be supplemented on the south as far as may be profitable.

	Thompson.	Medlicott.	Oldham's samples.
Ash . .	11.29	9.89	7.82
Fixed carbon . .	50.41	47.17	49.96
Volatile matter .	38.90	42.94	42.22
	100	100	100

4. As to the quality of the coal, various analyses were made in the summer of 1886 by Dr. Murray Thompson at Roorkee, and Mr. Medlicott, Director of the Geological Survey, of samples formed by collecting and mixing up coal from all the various drifts, one set being selected by Mr. Oldham of that survey. The results were as shown in the margin. The proportion of pyrites and sulphur detected was comparatively small.

5. Practical experiments were also made in June and July 1886 with 1,200 tons of Dandote coal and 900 of Bengal coal. The result is thus described by Colonel Conway-Gordon:—

"These experiments show that the consumption of Dandote coal is about 22.5, or, say, 25 per cent., in excess of Bengal coal. This result is satisfactory, considering that the drivers are new to the fuel, and that the coal experimented upon had to bear so many trans-shipments, and had not been screened before being used.

"It is at any rate now satisfactorily established that Dandote coal can be used for railway purposes without being first made into patent fuel. It will still be neces-

sary probably to use up all small coal in the shape of patent fuel, but there seems no doubt that the larger coal can be used screened, as it comes from the colliery.

"Taking the price of Bengal coal at 16·5 delivered on the North-Western Railway at its nearest point to the Bengal coal-fields, the corresponding price of Dandote coal may be taken at R13-0-10. We shall therefore gain the difference between R13-0-10 and the issue rate of the coal, whatever that may be, in addition to the difference in the cost of carriage from Khewra and Ghaziabad to the various engine stations.

"For instance, the cost of Bengal coal at Lala Musa, including carriage, is R24-13-2; deducting from this the cost of the carriage of 1½ tons of coal from Khewra, say R1-5-9, the difference between the balance, R23-7-5, and the issue price of Dandote coal, will represent the saving on every ton of coal burnt north of Lala Musa.

"If the Dandote coal thus can be supplied at R5 per ton, the saving on the 11,000 tons burnt annually on the Lala Musa to Peshawar section would be not less than R2,03,000 per annum, without counting the saving on the Sind-Sagar Railway."

These results as regards the utility of the coal have now been put beyond theoretical basis, the Lala Musa to Peshawar section of the Railway having been worked exclusively with Dandote coal for some months past.

6. The question of a system of working was investigated in July 1886 by Mr. W. Donkin, a mining engineer deputed for the purpose from the State Colliery at Warora in the Central Provinces. He was accompanied over the workings and whole locality by Dr. Warth, whose services were afterwards dispensed with. His report generally confirmed the anticipations entertained of the value of the colliery, and contained technical recommendations, too detailed for notice here, which are being generally acted on. The shaft necessary as an upcast for foul air is nearly completed, and an adit level, of the practicability of which he was doubtful, has been successfully driven from the scarp in under the coal, at such a level and grade as will secure natural drainage, and enable the loaded tubs to be brought out by mere gravitation. It has already reached the coal, but at a level about 40 or 50 feet above the curvature of the seam, instead of at the very bottom of it. This adit has also been designed to aid in exploring, by headings in various directions, the whole strike of the seam, and it is a minor question for early decision whether a second adit, which had been contemplated in order that the two might serve up and down traffic, shall be driven on the same level or the lower one. Mr. Henderson estimates that when all the arrangements now contemplated are completed the colliery will be able to turn out from 125 to 150 tons of coal per diem.

The underground operations are now in charge of Mr. Forsyth, a mining overseer sent out last summer by the Secretary of State. He seems an extremely well-conducted and competent man, underpaid considering his qualifications, but he is at present the only European in the workings, and three "deputy overseers" are urgently needed.

7. The permanent arrangements for conveyance of coal to the railway are far advanced, but cannot be completed until the receipt of the necessary wire rope and other plant from the Stores Department of the India Office.

The Khewra Salt Branch on the Sind-Sagar line has been extended on the broad gauge from Khewra for about two miles to Kalapani, at the foot of the hills; from this point a two-foot gauge tramway is to run up to the adit level or main entrance of the colliery, with a short branch thence round to the southern workings. This tramway is completed from Kalapani to the foot of the first rope incline, and up that incline to its summit. The second rope incline, which is merely a continuation of the first in a different direction, is also practically completed. From the summit of this incline to the tunnel mouth the tramway

is not laid, but it presents no difficulties, and can be ready by the time the winding machinery and wire ropes arrive and have been fitted up. A good zigzag mule-path has been made as a service road from Kalapani to Dandote, alongside the tramway as far as possible.

8. Pending the completion of the permanent arrangements, the coal is being brought down for use by temporary expedients. A cart-road runs nearly on a level to the edge of a cliff, whence bags of coal, made up at the colliery, are sent flying on a wire rope across an enormous chasm to a peak below; from this peak they are started on a second rope across another chasm down to the foot of the lower incline, and taken on by cart the short distance to Kalapani. This operation necessarily knocks the coal about a good deal, and causes a large amount of "smalls" and dust, which is rejected below by the Locomotive Department, who are very strict in this respect.

9. Under these temporary arrangements, the cost of the coal as accepted is necessarily high, and is stated to be as under at present:—

	Per ton.		
	R	a.	p.
Excavation and delivery at mouth of drift . . . . .	1	12	0
Timbering, roads, and general charges . . . . .	1	0	0
	<hr/>		
		2	12 0
Add 30 per cent. for wastage, rubbish taken out, &c., at pit's mouth . . . . .		0	15 0
Carriage to Kalapani Station . . . . .		1	8 0
	<hr/>		
		5	3 0
At Kalapani Station 30 per cent. of small coal and coal dust is rejected; giving <i>no value</i> to this at present, a further addition to price ensues of . . . . .			. 2 3 0
	<hr/>		
		7	6 0
Establishment charges about . . . . .		1	12 0
	<hr/>		
		9	2 0

This will come under large reduction as soon as the permanent tramway is completed, as the cost of conveyance will be less, and the wastage now caused by the repeated handling of the bags will almost disappear. Moreover, the general charges will fall in percentage when the output increases. At present it is about 900 tons per mensem, being limited by both the temporary arrangements and the necessity of working out certain large wood-fuel contracts on sections of the North-Western Railway east of Lala Musa, which is prolonged owing to the recent great fall in the export traffic.

Finally, a still further economy will accrue whenever the small coal and dust rejected above and below can be made into patent fuel. The Locomotive Superintendent of the North-Western Railway last year made  $6\frac{1}{4}$  tons of fuel on the Edford plan, cementing with 10 per cent. of ground lime. The fuel was fairly hard and convenient to handle. It was found on trial to be 9 per cent. worse than the raw coal, which was not an unfavourable result, considering that it contained 10 per cent. of foreign cementing matter. If the Rawal Pindi concession to Mr. Noble should prove a success, the refuse there, which is secured to Government under the contract at a low rate, will form an admirable cementing medium, while equalling the coal in combustibility; and in any case, the means of good cementing will be available, though at a greater distance, in the petroleum at Khattan.



## 2.—Punjab Oil-Lands.

No. 8, dated the 1st November 1887.

From—The Government of India,

To—The Secretary of State for India.

We have the honour to forward, for Your Lordship's information, the papers marginally quoted, relative to a concession of the right to search for and extract earth-oil in certain specified tracts in the Punjab, which we propose, subject to Your Lordship's confirmation, to grant to Mr. John D'Oyly Noble.

(1) Letter No. 133, dated 10th September 1887, to Government of India, Public Works Department, containing Mr. Townsend's report.

(2) Draft agreement.

firmation, to grant to Mr. John D'Oyly Noble.

2. The principles upon which we have proceeded in dealing with this case will be found in the draft memorandum of agreement. It will be seen that, by adopting the system of alternate blocks which is believed to obtain in Canada, we have carefully guarded against granting a monopoly to Mr. Noble; and clause iii of the agreement is so framed as to provide that if any two blocks selected by the contractor give good results, the intervening block of similar length along the line of oil will be at the disposal of Government.

3. We have given this matter our best consideration, and the terms we now propose for Your Lordship's confirmation are the result of detailed and careful discussion. They have been drawn up in consultation with the Punjab Government, and are entirely accepted by His Honour the Lieutenant-Governor. Our object throughout has been, while avoiding a monopoly, to start an industry which has many elements in it of promise, and we regard Mr. Noble's offer to undertake this enterprise as a matter of great importance to Northern India and as deserving of every encouragement. We are satisfied that the concession we desire to make is sufficiently advantageous to the Government and the country, in that there is little prospect of any practical knowledge of the earth-oil resources being gained unless or until the investigation has been commenced by some capitalists of experience like Mr. Noble. If the present offers are rejected, it may be years before any renewed efforts are made to explore the petroleum region. In the meanwhile the country will have lost the profit it might have gained from the earlier exploitation of the oil.

4. The draft agreement, which has been provisionally accepted by Mr. Noble, will now be sent to our Solicitor, who will reduce the terms to legal form: and we would request that Your Lordship's confirmation of the agreement may be communicated to us by telegraph, as Mr. Noble is in a position to commence operations almost at once, and we consider it essential that another working season should not be lost.

*Report on the Petroleum Deposits of Rawal Pindi.*

At several places in the Rawal Pindi plateau in the North Punjab, petroleum makes its appearance, saturating sandstones, shales, and limestones of tertiary age, with little or no surface accumulations; and it may be seen in small quantities upon the waters of sulphurous springs.

2. At Rutta Otoor, 12 miles north-east of Rawal Pindi, it is found slowly accumulating on the waters of an incipient spring in dark-gray limestone of lower eocene (of tertiary age); the spring has been enclosed by a small wall of masonry; and at the time of my

Rutta Otoor.

visit (August 17th last) there was a thin covering of dark-green oil upon the water within the enclosures.

The spring was almost inactive, and the oil accumulates, I fancy, very slowly indeed; its appearance, however, marks the place and its surroundings as being over, or near, a petroleum deposit of unknown value.

The rocks from this place up to the high range to the north, about a mile distant, are a continuation of those lying on the surface of the southern slope of this range, and are crushed, broken, and faulted to such an extent as to make every angle of dip without a general or distinctive one.

To the south of the spring are gray sandstones, red shales, and clays, with a dip north-west of from  $40^{\circ}$  to  $50^{\circ}$ ; their direction of dip and their position suggests their being reversed, in which case the gray lime in which the spring is located will be an erratic deposit having its origin in the covering stratum of the range to the north; the fact of the red shales appearing in the creek bed *under* the gray lime and *between* the spring and the mountain base supports the theory of reversal; and it is further strengthened by cracks and seams of the gray lime being filled with the dried residue of petroleum, over a considerable area of their exposure, round and about the village and spring.

This residue is not an asphaltum; it is a dried carbon crumbling to powder under pressure, and suggests the probability of these rocks having been immersed at some time in petroleum, and having been forcibly displaced, overturned, and left to dry out as drainage channels were cut through and around them. Should this view prove a correct one, there is little chance of getting oil by a boring near the spring: search would be more likely of reward further north, near the base of the range.

I need not dwell on the geological features of this locality, but will again refer to the gray lime and the dark-green oil in another connection.

3. Fatehgunge, about 30 miles by railway to the south-west of Pindi, where oil appears saturating rocks of eocene age, is another place visited. Several elaborate geological descriptions of this locality are published, and I need not therefore enlarge upon this part of my subject. The report of Mr. A. B. Wynne, made in 1877, is no doubt a correct one.

4. A few wells have been dug, and a boring or two made at a point about 2 miles to the north-west of the railway station (the place is called Gunda, I believe). These wells are located on a plain of several miles in extent, and a small yield of oil has been obtained from most of them; all are within an area of less than a square acre, and on the crown of an anticlinal composed of sandstones, limestone, shales, clays, and marls, in great variety of colours, and all nummulitic, no stratum being of greater thickness than 30'. There being but little alluvial deposit, the rocks are well exposed and show a succession of long, narrow anticlinal and synclinal foldings, with their upper surfaces denuded to a somewhat level condition, and having their long axes slightly curved from west to east; all are parallel to each other, and to the Chita Pahar range to the north, which here has a general east and west direction.

5. Crossing these outcrops at right angles from south to north, or from the railway station to the range named—a distance of 5 or 6 miles,—a particular stratum is found reappearing at nearly regular intervals, but with each successive outcrop dipping in an opposite direction and at no great distance from each other, thus showing the foldings to be repetitions in the same group of strata over the space indicated. These foldings, or waves, being narrow and numerous,

I conclude that their disturbed condition may not extend to any great depth, and that a more or less horizontal condition of the rocks beneath may prevail,—an important feature with reference to a petroleum deposit of any extent being confined below.

There is little faith to be placed in the power of rocks so nearly vertical, composed of soft sandstones, porous limestone, shales, and clays, such as these are, to retain within them any considerable volume of liquid petroleum, in the absence of an impervious covering, and against the pressure of water and gas; any indigenous oil must have escaped long since.

It is, however, quite possible for such rocks, particularly the soft sandstones and porous limes, to act as vehicles in the conveyance of liquid petroleum to the surface, in small quantities, from more favourably situated and deeper rocks.

6. I am inclined to think Fatehgunge oil-shows have an origin akin to the later geological conditions—

- (1) because all the shows so far observed are confined to one or two of the strata having their outcrop at the crown of a definite anticlinal, and to this they all cling with precision; and
- (2) because I am convinced that none of the Punjab petroleum is indigenous to the sands, limes, or shales lying above the gray limestone of eocene age, which is found outcropping to the north, and which is the true source of the petroleum of this locality, and probably of all the tertiary oils of India.

Petroleum, in its slow passage upwards, through sandstones and shales, particularly if the latter be dry, undergoes a filtering process, resulting in oils of lighter colour than any coming from limestones direct.

In support of this statement, it will be found that every sample obtained from the lower eocene lime, such as those from Java and Rutta Ootoor, is of a very dark colour, and of a strong sulphurous odour, while those obtained fresh from sandstones or shales are of a lighter colour and nearly free from a sulphur smell; and this is a feature of petroleum wherever found in other countries.

7. In this connection I may mention the fact that the black heavy oil obtained at Khattan in Beluchistan comes direct from the dark-gray lower eocene limestone which in most of its features is so like that of the ranges bordering the north of the Rawal Pindi plateau.

The Khattan oil has become thick and heavy from exposure, and the absence of an impervious covering material. I have traced this Gray limestone. dark limestone from near Quetta, through Beluchistan in a south-east direction to beyond Khattan; and I now find it in the North Punjab, extending far to the south-west, where it no doubt joins with those coming from Khattan way.

It would be interesting to know if it penetrates westward to beneath the wonderful spouting wells of Baku, and to the eastward through Assam to the oil-fields of Burma. I have seen it in the latter country in the Aracan Yoma range, associated with sandstones, shales, and petroleum.

8. In Mr. H. B. Medlicott's "Notes on the Occurrence of Petroleum in India," published last year, his paragraph 25, page 198, calls attention to the vertical condition of the rocks in the oil-fields of Galicia and Roumania in Europe, and their similarity

to those of India, meaning, no doubt, more particularly those of the Punjab. Quoting from Dr. Hochstetter, he says of the sandstones and shales :—

“He considers these rocks to have nothing to do with the oil otherwise than as vehicles; that the oil is not indigenous in these beds through which it makes its way to the surface, but is the product of the distinctive distillation of organic matter at great depths in coal-measures or other measures that may be supposed to underlie the Carpathian sandstones.

“He indicates vaguely the difference of stratigraphical conditions here and in Pennsylvania, where the oil-beds are struck at definite horizons; whereas in Galicia it is declared that the only chance of abundant oil is by tapping one of the more or less vertical deep-seated fissures through which it rises to be diffused in the crushed strata near the surface, where it is slowly extracted. Here, as in other fields, it is found that the lighter oil comes from the greater depth.”

9. In 1880 I had the pleasure of directing the attention of a Canadian, Mr. W. H. McGarvy, to the German and Galician oil-fields; he in company with a Mr. Burghelm has put down many borings with Canadian tools and men, to depths of over 1,200 feet, and has won prolific wells in Galicia, and is now carrying on a large and profitable business with a colony of some 20 or 30 Canadian millers. In his deep wells oil is obtained from *below the vertical sandstones and shales*; and all of them begin on a well-defined and narrow outcrop, which appears to be located above the oil sources below—a fact of considerable importance in its bearing on the Fatehgunge rocks, so similar in stratigraphical and other features.

10. No borings have been carried down to sufficient depths at Fatehgunge  
Fatehgunge wells. to decide its value as an oil-field.

There are in all 5 wells and borings of sorts, ranging in depth from 68 feet to 274 feet; some were put down many years ago, and their past and present total production is but a few gallons daily. They are of no more value as data from which to estimate the character of the field than were the shows of oil at the surface which led to their construction.

The deepest well, No. 2, is wholly a boring, and is now 274 feet from the surface; it was drilled with the English style of tools driven by steam power. Work has been suspended because of the defective character of the tools, and their unfitness to be driven deeper with anything like economy or safety; borings Nos. 2 and 5 (the latter 68 feet deep) are located on an outcrop of yellowish soft limestone, abounding in nummulites; this stratum is about 6 feet thick and stands nearly vertical; on each side of it there is a thin stratum of red shale, and the tools are believed to have penetrated one of these shales in the No. 2 borings at or near the bottom.

No. 3 well, only a few feet to north, is sunk as a shaft to 30 feet or 40 feet, and continued to 77 feet as a boring; this is also on a vertical thin stratum of soft mixed lime and sandstone, which is succeeded by shales and clays.

11. These rocks form the crown of an anticlinal, the long axis of which runs east and west for some miles, and along which many shows of oil are seen, notably those at Chhрут.  
Anticlinal. Chhрут. 3 miles to the west of the group at Gunda: here the rocks are beautifully exposed in cross section to a depth of about 25 feet by the abrading waters of a torrent creek crossing them at right angles.

The shows here are very good ones indeed; and I am told that a considerable quantity of oil has been taken from them from time to time.

On the tops of the low hills for miles round about Fatehgunge are scattered rough, angular blocks of stielagmite (travertine), in which there are perfect casts of reed stems, tree branches, &c., many in appearance resembling branched coral; but on being broken all show casts of vegetable growth! This travertine shows no sign of conformable bedding, but appears to have been deposited in a more or less horizontal plane over the tops of the older and denuded rocks.

12. In a recent report (not yet circulated) on an exploration of the Harnai valley for oil, I have called attention to a similar deposit of miles in extent at Spintangi, and showed that the process is still going on, its sources being in voluminous sulphur springs at the base of a range of gray eocene limestone in the vicinity.

The same thing from the same agencies is found at Khattan; and it is likely that the gray limestone bordering the Fatehgunge plane is the source from which the travertine of the locality has originated, the springs of supply having long ceased to be active.

This travertine appearing in so many places, always near the dark-gray eocene rocks, and often in company with petroleum, suggests abundance of warm springs similar to those at Khattan, and appears to strengthen the theory of petroleum being the product of the slow distillation of carbonaceous and organic matter along axes of deep disturbance.

13. The oils from the Pindi district are of a better quality and of greater commercial value than any obtained thus far at Khatlan; and it is quite probable that if obtained from deep borings it will be still better. No natural gas appears with any of the shows seen by me, nor has any appeared in the borings at Fatehgunge—a fact which points to the great bulk of the oil deposits having escaped, or to the more likely chance of its deep concealment, with its confined gas so far untouched.

14. Within the gas-works compound at Pindi I had erected a small copper still, and distilled fractionally a few gallons of oil from Fatehgunge, treating the products chemically under not very favourable circumstances, and obtained the following excellent results from crude oil, which, by show infiltration into the wells, and by exposure, had lost much of its original lighter elements to its detriment as a kerosine producer.

		Beaume's scale.	
* " Patching oil."	26% Kerosine	Sp. gr.	·826=39·5
	10 „ * Intermediate	„ „	·865=32
	44 „ Paraffine	„ „	·905=24·5
	16 „ Tar	„ „	·994=11
	1 „ Loss		
<hr/>			
100			

The above products were taken from a crude oil of sp. gr. ·900.

15. The time at my disposal was too short to admit of an extended examination of this interesting North Punjab district. I would have liked much to have visited Kalabagh, a place about 100 miles south-west of Pindi on the Indus, where, from a spring, oil of dark colour is obtained in quantities equal, or nearly so, to the total product at Fatehgunge. I had to abandon the journey as I found it would require a fortnight to accomplish it.

Brief examination.

Besides this, there are many other places within easy distances of Pindi; but I fancy they are all of common origin, varied only by stratigraphical or topographical differences.

The ease with which this supposed oil-field can be reached, the North-Western Railway skirting it for miles, the favourable lay of the land over long wide valleys, the question of fuel, water, labour, and food-supplies, and character of climate, place it in great contrast with others known to me, where there is a probability of obtaining petroleum in quantity.

16. I need not call marked attention to the value of a really productive oil-field to India, especially were it located near the pleasant shades of so pretty a town as Rawal Pindi; but especially valuable would be a rich find of petroleum containing such varied and valuable elements as that under consideration.

17. I was greatly interested in the gas-works at Pindi, which are under the control of Colonel B. Lovett, R.E., who, through his Superintending Gas Engineer, Mr. C. H. Blackburn, has been supplying the military barracks and, I believe, a part of the town with gas made chiefly from petroleum for some years past.

Colonel Lovett has against hostile criticism steadily maintained his faith in petroleum being obtainable in quantities in his district; and he and Mr. Blackburn have recently conducted boring operations at Fatehgunge with poor appliances, in hope of getting sufficient crude oil to supply all Pindi with gas: let us hope they may not be for ever dissappointed.

Experience in gas-making from crude petroleum may be turned to the treatment of these oils in other ways; and although the Pindi gas-works do not embody the latest improvements, yet they are a model of neatness and order; and they may yet form the nucleus of larger works for the manipulation of petroleum.

I am indebted to Colonel Lovett and Mr. Blackburn for the most kindly attention and useful assistance while making these hasty investigations.

18. Having been able to dispense with lengthy geological statements in this paper has saved me a lot of labour. To those who care for a detailed geological account of the region I refer them to Mr. A. B. Wynne's report of 1877.

19. To one who for years has sought, and found, the oily fluid in its jungle fastnesses and in some dark and ugly corners of the earth, there comes at this stage the temptation to make the wish father to the thought, and recommend without hesitation costly and extensive trial borings over the Rawal Pindi plateau, which, by comparison, is so fair a land and so easy of access; but this I am not prepared to do, for, notwithstanding fine shows and many of them, the element of uncertainty in testing for large deposits of petroleum is a constant attendant upon the wisest and most experienced among oil-miners, even with the addition of a geological knowledge pertaining to such work. But as a steam-engine and considerable useful plant is already in the field at Rawal Pindi, and in view of the many and good shows which mark the rocks at the surface, after climbing through, perhaps, hundreds of feet of strata, and in view of the great value to the Punjab in particular and to India as a whole, which a large

production of an excellent quality of oil would be, I think it a pity to let the question of oil or no oil, in the North Punjab, remain much longer an unsolved problem. The adventurous miner of America would sniff the oil-shows which I have seen during the past month with mental visions of derricks, tanks, pipe lines, and refineries in the near future, and would give it a trial were it in any other country than "far-off India."

Unfortunately, Western capital seeks investment in this part of the Orient very slowly. Cannot the Government of India offer some form of inducement to practical oil-miners and men of capital?

SIMLA,  
9th September 1887.

R. A. TOWNSEND,  
*Superintendent of Petroleum  
Experiments in Beluchistan.*

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*Memorandum of Agreement* made at Simla in the Punjab the , eighteen hundred and eighty-seven, *between* the Secretary of State for India in Council (hereinafter called "the Government") of the one part, and John D'Oyly Noble, Esq., of Petrolia, Ontario, Canada (hereinafter called "the Contractor") of the other part: *whereas* by virtue of section forty-one of the Punjab Land Revenue Act, eighteen hundred and eighty-seven, all earth-oil shall be deemed to be the property of the Government, and the Government shall have all powers necessary for the proper enjoyment of its right thereto: *and whereas* it is competent to the Government to assign and make over the right to search for and extract earth-oil and all powers necessary for the proper enjoyment of the said right as it may think proper: *and whereas* the Government is willing to assign and make over to the Contractor certain rights and privileges and to contract with him on the terms and subject to the conditions hereinafter expressed, and the Contractor is willing to accept the said right and privileges from and to contract with the Government on the said terms and subject to the said conditions: the Government and the Contractor hereby agree as follows, but subject always to the confirmation of this agreement by Her Majesty's Secretary of State for India:—

I.—On and from the first day of January eighteen hundred and eighty-eight until the thirty-first day of December eighteen hundred and ninety inclusive, or until the Contractor has selected, in the manner hereinafter in this Article provided, five blocks of land in the area and for the purpose in this Article described, whichever may happen first, the Contractor shall enjoy the exclusive right of prospecting for earth-oil throughout the whole of the Punjab as now existing, north and west of a line drawn from the town of Jammu to the town of Sialkot, thence following the line of the railway *vid* Wazirabad, Lala Musa, Pind Dadan Khan, and Kundian to Khoawar, and from the last-named place due west to the western frontier of the Punjab. The Contractor shall not be deemed to have selected a block unless and until he shall have—

- (a) prepared and delivered to a revenue officer appointed by Government in this behalf a plan of the proposed block showing its situation and boundaries and signed by the Contractor:
- (b) have satisfied the said revenue officer that the proposed block is such as may be selected in accordance with the provisions of this agreement:
- (c) have thereafter erected marks suitable in the opinion of the said officer showing the boundaries of the block:

(d) have obtained a certificate from the revenue officer endorsed on the said plan declaring the completion of the matters hereinbefore in this Article provided : and

(e) have delivered the said plan to Government.

II.—If any well sunk by the Contractor for the purpose of prospecting only, and previously to the selection by him of the blocks of land hereinbefore in Article I of this agreement referred to, to the depth of five hundred feet or more below the level of the ground, does not produce earth-oil in remunerative quantities and is consequently abandoned by him, the Government will (but subject always to the proviso hereinafter in this Article contained) pay to him the sum of Rs2,500 on account of such well so abandoned. *Provided always* that nothing shall be payable by the Government to the Contractor on account of any such well unless and until he shall have filled up such well and shall have removed any obstructions which he may have placed in, on or near the same : and the Contractor hereby binds himself to fill up all such wells so abandoned, and to remove all such obstructions in, on or near the same.

III.—The blocks of land referred to in Article I of this agreement shall be square, with sides each four miles long, each block amounting to sixteen square miles in total area, and the said blocks of land may in the discretion of the Contractor be less than, but shall not exceed, five in number. *Provided* that each such block shall be locally distinct from the rest, and that there shall be an interval of not less than four miles between the nearest points of any two of such blocks.

IV.—The Government agrees that upon a request in writing by the Contractor delivered to or left at the office of the Financial Commissioner of the Punjab at Lahore on or before the thirty-first day of December eighteen hundred and ninety (but subject always to the provisos hereinafter in this Article contained) it will assign to the Contractor on the terms and subject to the conditions hereinafter in this agreement expressed, for the term of fifty years reckoned from the first day of January eighteen hundred and eighty-eight inclusive, the right to extract earth-oil from beneath the blocks of land hereinbefore in Articles I and III referred to, together with the right to occupy during the continuance of such right of extracting earth-oil so much of the surface area in each such block of land as the Contractor may require for his wells, and for the machinery and the buildings connected with the said wells and machinery and for approaches thereto, and together also with the right to occupy during the continuance of such right of extracting earth-oil a surface area at Rawal Pindi or other suitable place on the North-Western Railway for the erection of a refinery and oil-works and for the approaches thereto and not exceeding twenty acres in extent. *Provided always* that the Contractor shall not be entitled to make borings, sink wells, or establish works or approaches of any sort in or upon any place in respect of which the Government may object on public grounds to his so doing. Places of worship, sacred groves, burial grounds, towns, village sites, military cantonments, public roads, railways, and salt-works are included, among others, in such places as are referred to in this proviso. *Provided further* that all rights and privileges whatsoever of the Contractor under or by virtue of these presents shall forthwith become absolutely null and void and shall finally cease and determine without any right to compensation on the part of the Contractor on any account whatsoever, either—

(a) if the Contractor shall not commence the work of extracting earth-oil as aforesaid on or before the first day of January eighteen hundred and ninety-three : or



- (b) if the work of extracting earth-oil as aforesaid shall at any time be discontinued by the Contractor without intermission during a period of three consecutive years.

V.—The Government agrees (but subject always to the provisos herein-after in this Article contained) to buy from the Contractor during a term of five years at a fixed rate of Rs11-4-3 per cwt. whatever quantity of lubricating oil may from time to time be required by the North-Western Railway and not in any case less than eight hundred and four tons *per annum*, the said oil to be delivered in bulk by the Contractor into the tank-wagons of the said railway on the railway siding at the works hereinbefore in Article IV and hereinafter in Article XI of this agreement referred to, and to be measured as may be mutually arranged in the said tank-wagons as fast as delivered :

*Provided always that—*

- (1) the said oil shall be subject to the approval of the Director of the North-Western Railway as to quality :
- (2) the Contractor shall give three months' notice in writing to the Director of the North-Western Railway, Lahore, of his intention to commence delivery of the said oil under this agreement and shall together with the said notice deliver also one sample containing three hundred and sixty pounds weight of the oil which he proposes to supply under the terms of this Article :
- (3) If at any time after commencing delivery of the said oil under this agreement the Contractor desires to discontinue the supply thereof, he shall give three months' notice in writing of such intention to the Director, North-Western Railway, Lahore.
- (4) If the Contractor shall fail to commence delivery of the said oil under this agreement within five years reckoned from the first day of January eighteen hundred and eighty-eight, then and in such case the Government shall be entitled to refuse to buy any such oil from him.

VI.—The Government agrees to transport, during a period of five years commencing on the first day of January eighteen hundred and eighty-eight (after the expiration of which period the rate shall be the subject of mutual agreement between the Government and the Contractor), from Karachi or from any other station on the North-Western Railway as the Contractor may desire to Rawal Pindi or to any other station on the North-Western Railway where, or in the vicinity of which, the Contractor is about to commence, or has commenced, any work under this agreement, all machinery, tools, materials, and appliances imported into, or obtained in, British India by him for prosecuting his business under this agreement at an uniform rate of one quarter pie per maund per mile. *Provided always* that the said articles shall be of such dimensions and weight as can safely and conveniently be transported on the line and its rolling-stock as from time to time existing.

VII.—Subject to any provisions of law for the time being in force and relating to the possession or transport or storing of earth-oil or of products manufactured therefrom, the Government agrees to transport, during a period of five years, to be reckoned from the date of the delivery to the railway by the Contractor of the first consignment of oil for conveyance by rail (after the expiration of which period the future rates shall be the subject of special agreement from time to time between the Government and the Contractor), over all Indian railways worked by the State, any quantity of earth-oil extracted from wells

sunk under this agreement, and of products manufactured by the Contractor from the said earth-oil at works constructed and maintained as provided in Article XI of this agreement, at the uniform rate of one quarter pie per maund per mile in the case of consignments of full wagon-loads. Smaller consignments or broken quantities not forming each a full wagon-load shall, however, only be conveyed at the ordinary rates from time to time in force on the said railways. And the Government agrees that the North-Western Railway will, so far as may, in the opinion of the Director of the said Railway, be possible, furnish from time to time at the oil-works mentioned above the necessary tank-wagons required for transporting the oil in bulk.

VIII.—The Contractor agrees to deliver to the Government by way of land revenue, free of all expense, at each of the wells pumping earth-oil, either on or before the last day of each month, or on or before the last day of every third month (as the Government shall elect and shall intimate to the Contractor such election in writing before the day of the first delivery under this Article), into tanks or vessels to be provided for this purpose by the Government, one twentieth part of all the crude earth-oil obtained from the land in the occupancy of the Contractor under this agreement. *Provided always*, and the Contractor hereby agrees, that it shall be competent to the Government (without prejudice to the right of the Government to at any time revert to payment in kind) to at any time require the Contractor in lieu of so delivering to it the said one twentieth part of crude earth-oil to pay to it land revenue in cash, the said land revenue to be paid at the fixed rate of three rupees per three hundred and fifteen pounds weight of the said earth-oil up to the last day of December eighteen hundred and ninety-two inclusive, and thereafter, if the Contractor be at any time unwilling to pay at the said cash rate whenever required to do so, at such other rate not exceeding the said sum of three rupees per three hundred and fifteen pounds weight of the said earth-oil as shall be annually assessed by the Government as the local market value of such earth-oil.

IX.—The Contractor further agrees that, in the event of any oil-works being erected by him for the refinement or conversion in any manner of earth-oil obtained by him under this agreement, the Government shall be entitled to buy from him at the lowest *bond fide* price obtaining in the local market, in preference to all other persons, any residuum of such earth-oil which from time to time the Contractor may have to dispose of.

X.—The Contractor further agrees that accurate books of accounts shall at all times during the continuance of this agreement be kept at each well showing the production and delivery of oil from such well, and shall at all times be open to the inspection of the Government, which shall be entitled to make any extracts therefrom that it shall think necessary.

XI.—The Contractor further agrees that if in his opinion he is successful in finding earth-oil in paying quantities, he will within the period of five years reckoned from the first day of January eighteen hundred and eighty-eight erect and thereafter during the continuance of this agreement maintain works for the manufacture of kerosine and railway lubricating oil either at Rawal Pindi or at some other suitable place on the line of the North-Western Railway.

XII.—The Government hereby agrees that it will not levy from the Contractor, in respect of the land occupied by him under this agreement, or in respect of the necessary approaches thereto, any land revenue in excess of that specified in Article VIII of this agreement. *Provided always* that this exemption shall not be construed as extending to any local taxation nor to any other land

occupied by the Contractor and not actually taken up by his works erected and maintained under this agreement or by the necessary approaches to such works.

*Provided further* that nothing in this agreement contained shall be deemed to exempt the Contractor from any liability to pay any excise duty on earth-oil or other tax (whether of that description or not) for the time being in force, not made the subject of express agreement in this instrument.

XIII.—The Contractor further agrees to pay any compensation claimable under section forty-three of the Punjab Land Revenue Act XVII of eighteen hundred and eighty-seven in respect of anything done by him or by his agents in pursuance of this agreement, and to indemnify and hold harmless the Government in respect thereof in all respects, at all times, and under all circumstances. And the Contractor further agrees to pay whatever compensation may be claimable in respect of the occupation of the surface area at Rawal Pindi or other suitable place (not exceeding twenty acres in extent) and to indemnify and hold harmless the Government in respect thereof in all respects, at all times, and under all circumstances.

XIV.—The Contractor further agrees to proceed immediately after the execution of this agreement to Canada, and to bring out with all despatch to the area specified in Article I of this agreement, at his own expense, but subject always to the conditions as to transport specified in Article VI of this agreement, machinery, tools, skilled mechanics, and all other necessary material and appliances sufficient for the purpose of effectively prosecuting his search for earth-oil with all due diligence and despatch, and to put down to a depth of not less than five hundred feet each not less than ten wells in the area specified in Article I of this agreement before the expiration of the period referred to in the said Article.

XV.—The Government and the Contractor further agree that it shall be competent to the Local Government to make at any time a special order within the meaning of section three of the Punjab Land Revenue Act of eighteen hundred and eighty-seven, declaring any or all of the blocks of land selected by the Contractor under Article I of this agreement to be an estate within the meaning of the said Act.

XVI.—The expense of providing the proper stamp payable on this agreement shall be borne by the Government.

XVII.—And it is lastly agreed and declared by and between the Government and the Contractor that in the event of any dispute arising between them in respect of this agreement or any part thereof or in any wise incidental thereto (including, among other matters, the respective rights and duties of the said parties to this agreement, the true interpretation of the several articles of this agreement, the quality of the lubricating oil referred to in Article V of this agreement, the cash rate to be assessed (after the last day of December eighteen hundred and ninety-two) under Article VIII of this agreement in lieu of payment in kind, and the meaning of the terms, conditions, and stipulations in this agreement contained) such dispute shall be referred to arbitration and decided in manner hereinbelow set forth, and that (in case of a claim for money) only the amount awarded in such arbitration shall be recoverable in respect of the dispute so referred: and that the award on any such reference shall be abided by and observed by the parties to this agreement in all respects:—One arbitrator (who shall be in no way concerned, directly or indirectly, with the performance of this agreement or with the matter in dispute) shall be nominated by the Government, and one arbitrator (who shall be in no way concerned, directly or indirectly, with or interested in the Contractor's business or the matter in dispute) by the Con-

tractor : and one umpire shall be appointed by the two arbitrators aforesaid by mutual consent ; provided that such umpire shall be at the time of such appointment either a barrister-at-law or a member of the Judicial service in India of a grade not inferior to a District Judge. In the event of the arbitrators concurring, but the umpire disagreeing with both arbitrators, the decision of the arbitrators shall be conclusively binding on both parties to this agreement. In the event of a difference of opinion between the arbitrators, the decision of that arbitrator with whom the umpire shall concur shall be conclusively binding on both parties to this agreement : and in the event of such difference of opinion and of the umpire concurring with neither arbitrator, the arbitrators shall proceed forthwith to appoint by mutual consent a fresh umpire and the matter in dispute shall be investigated and decided *de novo* : and so on until a decision of a majority is reached.

*Interpretation Clause.*—In this agreement, unless there be something repugnant in the subject or context,—

“Contractor” includes the Contractor, his heirs, legal representatives, and assigns.

“Government” includes, in respect of matters dealt with by the Punjab Land Revenue Act of eighteen hundred and eighty-seven, the Financial Commissioner of the Punjab having authority in respect of the said matters under the said Act, and as to other matters includes also every person duly authorised to act for or represent the Government in relation to any matter or thing contained in or arising out of this agreement.

*In witness whereof* the parties to these presents have hereunto set and subscribed their hands and seals on the dates hereinafter mentioned respectively :—

Signed, sealed, and delivered for and on behalf of the Secretary of State for India in Council by Sir Edward Charles Buck, Kt., Secretary to the Government of India, Department of Revenue, Agriculture and Commerce, acting in the premises by order of the Governor General in Council, on the            day of            , one thousand eight hundred and eighty-seven.

Signed, sealed, and delivered by the said John D'Oyly Noble on the            day of            , one thousand eight hundred and eighty-seven.

Witnesses.

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No. 1 P. W., dated 12th January 1888.

From—The Secretary of State for India,

To—The Government of India.

I have received and considered in Council Your Excellency's Revenue and Agricultural Department letter No. 8, dated 1st November 1887, submitting for sanction a draft agreement which you propose entering into with Mr. John

D'Oyly Noble to provide for the search and extraction of earth-oil in certain specified tracts in the Punjab.

2. I fully concur with Your Excellency in your desire to encourage, as far as you legitimately can, the development of such an important enterprise in India; and, in order to meet your views so far as practicable, I have communicated my assent by telegram\* to a provisional arrangement being entered into with Mr. Noble by your Government, in order that, if possible, the present working season may not be lost.

\* *Secretary of State to Viceroy, dated 10th January 1888.*

"Your Revenue letter No. 8 of 1887. Provisional arrangement can be made with Noble to save cold season, but modifications of agreement desirable. Despatch follows."

3. I trust that this provisional sanction will have allowed operations to proceed, and I now address you in respect to modifications in the agreement which, I am informed, can properly be suggested in its terms.

4. The general scope of the agreement is somewhat liberal to the lessee; but in this I am prepared to concur, in view of the expediency of affording all legitimate help to the enterprise. The points in which some modifications, in a sense more favourable to Government, might be arranged, are as follows:—

*Clause 2.* As this clause stands, the contractor may without restriction sink prospecting wells, and for each well so sunk receive Rs 2,500. It is certainly very unusual for a lessor to pay for unsuccessful attempts on the part of his lessee, and it seems clearly desirable that the number of wells sunk for prospecting should be limited in number and subject to approval as to place; while it should be distinctly stated that these prospecting wells are to be subject to Clause 13 of the agreement in respect to compensation to surface owners.

*Clause 3.* The area named, 16 square miles, appears large, but I presume you have well considered this point.

*Clause 4.* Conditions (a) and (b) of this clause should be made to apply specifically to each of the plots of four miles square comprised in lease. Otherwise the contractor could commence and not discontinue work in *one only* of the blocks, and the lease would remain valid.

*Clause 7.* The last provision in this clause may prove very inconvenient to Government; and if it remains, the supply of tank wagons should be limited in number. If the enterprise prove successful, the lessee should, as in the case of collieries in England, provide his own machinery.

*Clause 8.* Payment in kind to Government is likely to prove highly inconvenient, and the rent should be received in cash, giving Government power to buy one-twentieth of the crude earth-oil obtained if it so desires.

*Lastly.* A clause should be inserted prohibiting the lessor to assign the benefit of the contract, or in any part thereof, without consent of Government, and subject to Government being satisfied with the responsibility of the proposed assignee and general conditions of transfer.

5. With these remarks I leave the negotiations to your Government subject to my being fully informed of your proceedings in the matter.

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No. 5, dated 1st May 1888.

From—The Government of India,

To—The Secretary of State for India.

We have the honour to report, for Your Lordship's information, that after having fully considered the modifications and additions suggested in Your Lordship's Despatch No. 1 (Public Works), dated 12th January 1888, we have completed the agreement with Mr. J. D'O. Noble for the right to search for and

extract earth-oil in certain tracts in the Punjab. A copy of the deed which has been executed is enclosed.

2. The number of prospecting wells for which, if unsuccessful, the Government subsidy of Rs2,500 may be claimed by Mr. Noble, has, in accordance with Your Lordship's wishes, been limited, the number being fixed at ten (clause V); but we have not considered it expedient to impose the condition that the site selected for each well shall be subject to the approval of Government. The large expenditure involved in each trial-boring is covered only to a limited extent by the Government guarantee, and it is to the Contractor's interest to select localities which promise the best results.

We are advised that clause XIV, read with section 43 of the Punjab Land Revenue Act, 1887, sufficiently provides for payment by the Contractor for compensation to surface owners for any damage or disturbance caused in conducting prospecting operations.

3. Clause VI has been modified as directed by Your Lordship, and the Contractor's rights and privileges will cease in each block of land selected by him in respect to which conditions (a) and (b) are not fulfilled.

As regards the objection to the supply by Government of tank wagons for the conveyance of oil, we would remark that it is not usual in India for private individuals to supply vehicles in such cases, and that the rates of freight fixed by the agreement were based on the supposition that wagons would be provided by the railway authorities. As the number of wagons to be provided is, under the wording of clause IX, at the absolute discretion of the Director of the North-Western Railway, no modification of the clause has been deemed necessary.

4. Clause XI, relating to the payment of rent or royalty, has been modified so as to make the rent payable on all oil removed from the site of any well whether in the course of trial-borings or after selection of blocks; and as desired by Your Lordship, the rent has been made payable in cash.

A clause (XVI) has also been added, which prohibits the Contractor from transferring his interests under the agreement without the previous consent of Government.

5. We would add that some minor alterations have been made in the agreement, including a re-arrangement of the clauses and the insertion of provisions referring to arbitration any dispute in regard to the quality of the lubricating oil supplied to the railway under clause VII (1) and the crude oil purchased by Government under clause XI.

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MEMORANDUM OF AGREEMENT made at Calcutta the twenty-third day of March, eighteen hundred and eighty-eight, *between* the Secretary of State for India in Council (hereinafter called "the Government") of the one part, and John D'Oyly Noble, Esq., of Patrolia, Ontario, Canada, but at present residing at Calcutta (hereinafter called the "Contractor") of the other part: **WHEREAS** by virtue of Section 41 of the Punjab Land Revenue Act, eighteen hundred and eighty-seven, all earth-oil shall be deemed to be the property of the Government, and the Government shall have powers necessary for the proper enjoyment of its right thereto: **AND WHEREAS** in exercise of such powers it is competent to the Government to assign and make over the right to search for and extract earth-oil and all powers necessary for the proper enjoyment of the said right as it may think proper: **AND WHEREAS** the Government is willing to assign and make over to the Contractor certain rights and privileges and to contract with him on the terms and subject to the conditions hereinafter expressed, and the Contractor is willing to accept the said rights and privileges from and to contract with the

Government on the said terms and subject to the said conditions : Now it is hereby agreed between the Government and the Contractor as follows.

I.—On and from the first day of January eighteen hundred and eighty-eight until the 31st day of December eighteen hundred and ninety inclusive, or until the Contractor has selected, in the manner hereinafter in this Article provided, five blocks of land in the area and for the purpose in this Article described, whichever may happen first, the Contractor shall enjoy the exclusive right of prospecting for earth-oil throughout the whole of the Punjab as now existing, north and west of a line drawn from the town of Jammu to the town of Sialkot, thence following the line of the railway *vid* Wazirabad, Lala Musa, Pind Dadan Khan, and Kundian to Khoawar, and from the last-named place due west to the western frontier of the Punjab. Provided always that this license to prospect shall not be taken as authorizing the Contractor to enter into or upon or conduct any operations in or at any place of worship, sacred grove, burial ground, town, village site, military cantonment, public road, railway, salt works or other place in respect of which on public grounds it may appear to Government that objections exist to his so doing. The Contractor shall not be deemed to have selected a block unless and until he shall have—

- (a) prepared and delivered to a Revenue officer appointed by Government in this behalf a plan of the proposed block showing its situation and boundaries and signed by the Contractor :
- (b) have satisfied the said Revenue officer that the proposed block is such as may be selected in accordance with the provisions of this agreement :
- (c) have erected marks suitable in the opinion of the said officer showing the boundaries of the block :
- (d) have obtained a certificate from the Revenue officer endorsed on the said plan declaring the completion of the matters hereinbefore in this Article provided : and
- (e) have delivered the said plan to Government.

II.—The blocks of land referred to in Article I of this agreement shall be square, with sides each four miles long, each block amounting to sixteen square miles in total area, and the said blocks of land may in the discretion of the Contractor be less than, but shall not exceed, five in number. *Provided* that each such block shall be locally distinct from the rest, and that there shall be an interval of not less than four miles between the nearest points of any two of such blocks.

III.—It shall be competent to the Local Government to make at any time a special order within the meaning of Section 3 of the Punjab Land Revenue Act, 1887, declaring any or all of the blocks of land selected by the Contractor under Article I of this agreement to be an estate within the meaning of the said Act.

IV.—The Contractor shall immediately after the execution of this agreement proceed to Canada, and shall bring out with all despatch to the area specified in Article I of this agreement, at his own expense, but subject always to the conditions as to transport specified in Article VIII of this agreement, machinery, tools, skilled mechanics, and all other necessary material and appliances sufficient for the purpose of effectively prosecuting his search for earth-oil with all due diligence and despatch, and shall put down to a depth of not less than 500 feet each not less than ten wells in the area specified in Article I of this agreement before the expiration of the period referred to in the said Article.

V.—For every well up to but not exceeding a maximum of ten in all sunk by the Contractor for the purpose of prospecting only, and previously to the selection by him of the blocks of land hereinbefore in Article I of this agreement referred to, to the depth of five hundred feet or more below the level of the ground which does not produce earth-oil in remunerative quantities, and is consequently abandoned by him, the Government will (but subject always to the proviso hereinafter in this Article contained) pay to him the sum of Rs. 2,500 on account of each such well so abandoned. *Provided always* that nothing shall be payable by the Government to the Contractor on account of any such well unless and until he shall have filled up such well and shall have removed any obstructions which he may have placed in, on or near the same: and the Contractor hereby binds himself to fill up all such wells so abandoned, and to remove all such obstructions in, on or near the same.

VI.—Provided the Contractor shall on or before the 31st day of December 1890, deliver to or leave at the Office of the Financial Commissioner of the Punjab a written notice of his desire to have and exercise the rights hereinafter mentioned, and provided he shall in the meantime duly perform all and every the obligations on his part contained in the foregoing articles, the Government by a letter under the hand of the said Financial Commissioner shall certify that the Contractor has become entitled to the rights hereinafter mentioned, and the Contractor shall thereupon become *ipso facto* entitled for and during the time of 50 years reckoned from the first day of January 1888 and subject to the terms and conditions hereinafter mentioned to the right to extract earth-oil from beneath the blocks of land so as aforesaid selected by him, together with the right to occupy during the continuance of such right of extracting earth-oil so much of the surface area in each such block of land as the Contractor may require for his wells, and for the machinery and buildings connected with the said wells and machinery and for approaches thereto, and together also with the right to occupy during the continuance of such right of extracting earth-oil a surface area at Rawal Pindi or other suitable place on the North-Western railway for the erection of a refinery and oil-works and for the approaches thereto, and not exceeding twenty acres in extent. But unless the Contractor shall on or before the said 31st day of December 1890 give such written notice as aforesaid and in the meanwhile perform and observe all the obligations on his part contained in the foregoing articles, this agreement shall be *ipso facto* determined as on and from the said 31st day of December 1890 except as regards rights accrued to either party prior to the determination of such agreement, it being hereby expressly declared that the giving of such notice and the due performance and observance in the meanwhile of the obligations on the part of the Contractor contained in the foregoing articles shall be a condition precedent to the enjoyment by the Contractor of the foregoing rights, and that these presents shall be so read accordingly throughout. Provided always and it is hereby declared that nothing herein contained shall be read as authorising the Contractor to make borings, sink wells, or establish works or approaches of any sort in or upon any place in respect of which the Government may object on public grounds to his so doing. Places of worship, sacred groves, burial grounds, towns, village sites, military cantonments, public roads, railways, and salt works are included, among others, in such places as are referred to in this proviso. Provided also that the right to the occupation of a surface area at Rawal Pindi or other suitable place on the North-Western Railway for the erection of a refinery and oil-works and the necessary approaches thereto shall be conditional on the Contractor erecting such works before the expiration of the period of five years provided



for in Article XIII hereof, and that unless the Contractor shall complete such works before the expiration of the said period or make such progress therewith as Government shall consider satisfactory, the said right to occupy such surface area shall cease and determine as from the expiration of the said period.

Provided further and it is hereby expressly agreed and declared—

- (a) that if the Contractor shall not *bonâ fide* commence in each of the blocks selected by him as provided in Article I of this agreement the work of extracting earth-oil as aforesaid on or before the first day of January 1893; or
- (b) that if the work of extracting earth-oil as aforesaid shall at any time thereafter be practically discontinued by the Contractor in any one or more of the said blocks without intermission during a period of three consecutive years unless with the written consent of the Government;

then and in either of such events all rights and privileges whatsoever of the Contractor under or by virtue of these presents shall forthwith as regards the particular block or blocks in respect of which the Contractor shall have failed to comply with the foregoing conditions become absolutely null and void, and shall finally cease and determine without any right to compensation on the part of the Contractor on any account whatsoever, but without prejudice to the rights of the Contractor under these presents in respect of the block or blocks in regard to which there has been no such failure on his part as aforesaid.

VII.—The Government agrees (but subject always to the provisos hereinafter in this Article contained) to buy from the Contractor during a term of five years at a fixed rate of Rs11-4-3 per cwt. whatever quantity of lubricating oil may from time to time be required by North-Western Railway and not in any case less than eight hundred and four tons *per annum*, the said oil to be delivered in bulk by the Contractor into the tank-wagons of the said railway on the railway siding at the works hereinbefore in Article VI and hereinafter in Article XIII of this agreement referred to, and to be measured as may be mutually arranged in the said tank-wagons as fast as delivered:

*Provided always that—*

- (1) The said oil shall be subject to the approval of the Director of the North-Western Railway as to quality, whose decision as to such quality may, if desired by either party to this agreement, be referred for arbitration as provided in Article XVII.
- (2) The Contractor shall give three months' notice in writing to the Director of the North-Western Railway, Lahore, of his intention to commence delivery of the said oil under this agreement and shall together with the said notice deliver also one sample containing three hundred and sixty pounds weight of the oil which he proposes to supply under the terms of this article.
- (3) If at any time after commencing delivery of the said oil under this agreement the Contractor desires to discontinue the supply thereof, he shall give three months' notice in writing of such intention to the Director, North-Western Railway, Lahore.
- (4) If the Contractor shall fail to commence delivery of the said oil under this agreement within five years reckoned from the first day of January eighteen hundred eighty-eight, then and in such case the Government shall be entitled to refuse to buy any such oil from him.

VIII.—The Government agrees to transport, during a period of five years, commencing on the first day of January eighteen hundred and eighty-eight (after the expiration of which period the rate shall be the subject of mutual agreement between the Government and the Contractor), from Karachi or from any other station on the North-Western Railway as the Contractor may desire to Rawal Pindi or to any other station on the North-Western Railway where, or in the vicinity of which, the Contractor is about to commence, or has commenced, any work under this agreement, all machinery, tools, materials and appliances imported into, or obtained in, British India by him for prosecuting his business under this agreement at an uniform rate of one quarter pie per maund per mile. *Provided always* that the said articles shall be of such dimensions and weight as can safely and conveniently be transported on the line and its rolling stock as from time to time existing.

IX.—Subject to any provisions of law for the time being in force and relating to the possession or transport or storing of earth-oil or of products manufactured therefrom, the Government agrees to transport, during a period of five years, to be reckoned from the date of the delivery to the railway by the Contractor of the first consignment of oil for conveyance by rail (after the expiration of which period the future rates shall be the subject of special agreement from time to time between the Government and the Contractor) over all Indian Railways worked by the State, any quantity of earth-oil extracted from wells sunk under this agreement, and of products manufactured by the Contractor from the said earth-oil at works constructed and maintained as provided in Article XIII of this agreement, at the uniform rate of one quarter pie per maund per mile in the case of consignments of full wagon-loads. Smaller consignments or broken quantities not forming each a full wagon-load shall however only be conveyed at the ordinary rates from time to time in force on the said railways. And the Government agrees that the North-Western Railway will so far as may in the opinion of the Director of the said Railway be possible furnish from time to time at the oil-works mentioned above the necessary tank-wagons required for transporting the oil in bulk.

X.—The Government hereby agrees that it will not levy from the Contractor in respect of the land occupied by him under this agreement or in respect of the necessary approaches thereto any land revenue in excess of that specified in Article XI of this agreement. *Provided always* that this exemption shall not be construed as extending to any local taxation nor to any other land occupied by the Contractor and not actually taken up by his works erected and maintained under this agreement or by the necessary approaches to such works.

*Provided further* that nothing in this agreement contained shall be deemed to exempt the Contractor from any liability to pay any excise duty on earth-oil or other tax (whether of that description or not) for the time being in force not made the subject of express agreement in this instrument.

XI.—The Contractor agrees to pay to the Government by way of land revenue or rent the value of one-twentieth part calculated at the rate of rupees three for every three hundred and fifteen pounds weight (and so in proportion for a less quantity) of crude earth-oil obtained from the land in his occupancy under this agreement, and removed from the site of the wells, including all oil obtained in the course of prospecting operations: such rent at the rate aforesaid to commence from the date on which the Contractor first commences operations. The Contractor shall on or before the 15th day of each and every quarter of the calendar year at his own expense make and deliver unto the

Government a true and perfect account in writing signed by the Contractor or his duly authorised agent of all such quantities of crude earth-oil as shall have been obtained and gotten from the land in his occupancy under this agreement during the preceding quarter, showing the production and delivery of oil from each well, and shall with such statement tender to the Government the rent appearing by such statement to be due in respect of the earth-oil so obtained, and also shall and will permit the Government at all times to have free access and liberty to inspect and take copies of the whole or any part of the Contractor's books of account of earth-oil obtained and gotten from the said lands. *Provided always* that it shall be optional with Government to purchase one-twentieth or any less quantity of the crude earth-oil obtained at the aforesaid rate of rupees three for every three hundred and fifteen pounds weight, and to set off the price payable for the oil so purchased against the sum that would otherwise have been payable therefor by the Contractor as land revenue or rent; but all oil so purchased by Government shall be of the same average quality as the bulk of the oil extracted and removed by the Contractor, and any disputes that may arise as to its quality shall be referred to arbitration as hereinafter provided.

XII.—The Contractor further agrees that, in the event of any oil-works being erected by him for the refinement or conversion in any manner of earth-oil obtained by him under this agreement, the Government shall be entitled to buy from him at the lowest *bond fide* price obtaining in the local market, in preference to all other persons, any residuum of such earth-oil which from time to time the Contractor may have to dispose of.

XIII.—The Contractor further agrees that if in his opinion he is successful in finding earth-oil in paying quantities, he will within the period of five years reckoned from the first day of January eighteen hundred and eighty-eight erect and thereafter during the continuance of this agreement maintain works for the manufacture of kerosine and railway lubricating oil either at Rawal Pindi or at some other suitable place on the line of the North-Western Railway.

XIV.—The Contractor further agrees to pay any compensation claimable under section forty-three of the Punjab Land Revenue Act XVII of eighteen hundred and eighty-seven in respect of anything done by him or by his agents in pursuance of this agreement, and to indemnify and hold harmless the Government in respect thereof in all respects, at all times, and under all circumstances. And the Contractor further agrees to pay whatever compensation may be claimable in respect of the occupation of the surface area at Rawal Pindi or other suitable place (not exceeding twenty acres in extent) and to indemnify and hold harmless the Government in respect thereof in all respects, at all times and under all circumstances.

XV.—The expense of providing the proper stamp payable on this agreement shall be borne by the Government.

XVI.—The Contractor shall not nor will assign, subject or otherwise transfer or dispose of the rights and privileges conferred by this agreement save with the written consent of the Government first had and obtained.

XVII.—And it is lastly agreed and declared by and between the Government and the Contractor that in the event of any dispute arising between them in respect of this agreement or any part thereof or in any wise incidental thereto (including, among other matters, the respective rights and duties of the

said parties to this agreement, the true interpretation of the several articles of this agreement, any question that may arise as to the forfeiture of the rights conferred by Article VI of this agreement owing to the failure of the Contractor to comply with the requirements of sub-sections (a) and (b) of that article, the quality of the lubricating oil referred to in Article VII of this agreement, the quality of the oil referred to in Article XI and the meaning of the terms, conditions, and stipulations in this agreement contained), such dispute shall be referred to arbitration and decided in manner hereinbelow set forth, and that (in case of a claim for money) only the amount awarded in such arbitration shall be recoverable in respect of the dispute so referred; and that the award on any such reference shall be abided by and observed by the parties to this agreement in all respects:—One arbitrator (who shall be in no way concerned, directly or indirectly, with the performance of this agreement or with the matter in dispute) shall be nominated by the Government, and one arbitrator (who shall be in no way concerned, directly or indirectly, with or interested in the Contractor's business or the matter in dispute) by the Contractor: and one umpire shall be appointed by the two arbitrators aforesaid by mutual consent; provided that such umpire shall be at the time of such appointment either a barrister-at-law or a member of the Judicial Service in India of a grade not inferior to a District Judge. In the event of the arbitrators concurring, but the umpire disagreeing with both arbitrators, the decision of the arbitrators shall be conclusively binding on both parties to this agreement. In the event of a difference of opinion between the arbitrators, the decision of that arbitrator with whom the umpire shall concur shall be conclusively binding on both parties to this agreement: and in the event of such difference of opinion and of the umpire concurring with neither arbitrator, the arbitrators shall proceed forthwith to appoint by mutual consent a fresh umpire, and the matter in dispute shall be investigated and decided *de novo*: and so on until a decision of a majority is reached.

*Interpretation clause.*—In this agreement, unless there be something repugnant in the subject or context,—

“Contractor” includes the Contractor, his heirs, legal representatives, and assigns.

“Government” includes, in respect of matters dealt with by the Punjab Land Revenue Act, eighteen hundred and eighty-seven, the Financial Commissioner of the Punjab having authority in respect of the said matters under the said Act, and as to other matters includes also every person duly authorised to act for or represent the Government in relation to any matter or thing contained in or arising out of this agreement.

*In witness whereof* the parties to these presents have hereunto set and subscribed their hands and seals on the dates hereinafter mentioned respectively:—

Signed, sealed and delivered for and on behalf of the Secretary of State for India in Council by Sir Edward Charles Buck, Kt., Secretary to the Government of India, Department of Revenue and Agriculture, acting in the premises by order of the Governor General in Council, on the twenty-third day of March, one thousand eight hundred and eighty-eight.

EDWARD CHARLES  
BUCK, *Secretary to  
the Government of  
India, Department  
of Revenue and  
Agriculture.*

EDWARD COWIE, *Solicitor and Assistant to Solicitor to Government of India, Calcutta.*

Signed, sealed and delivered by the said John D'Oyly Noble on the twenty-third day of March, one thousand eight hundred and eighty-eight.

Witnesses.

JOHN D. NOBLE.

### 3.—Baluchistan Petroleum Operations.

No. 48 (Public Works), dated 4th November 1886.

From—The Secretary of State for India,  
To—The Government of India.

I have received Your Excellency's Public Works letter No. 39, dated 3rd September 1886, reporting your past proceedings in respect to petroleum explorations in Baluchistan, and indicating the steps which you consider it desirable to take in view to a prosecution of these explorations during the cold weather of 1886-87.

2. I learn from your letter and its enclosures that the operations hitherto have only been partially successful, for, although petroleum has been found at Khattan in Baluchistan, it has been obtained so far from shallow wells or borings, while it remains to be proved whether the so-called "live oil" exists at a considerable distance beneath the oil-charged strata at the surface. In order to establish this important point satisfactorily you have decided to provide a further sum of £1,00,000 for expenditure during this cold season, and have deputed Mr. A. R. Townsend, the expert who conducts operations, to England and Canada for the purchase of the necessary additional plant.

3. So much obviously depends on the value to be attached to Mr. Townsend's opinion and recommendations, which, indeed, are the main guide in the matter, that I take it for granted Your Excellency's Government are quite convinced of his professional capabilities.

4. Meantime, oil having been produced and successfully used on locomotives the contemplated further outlay is not immoderate in view of the considerable financial benefits to be derived from a successful result of the explorations. Your proceedings in this matter, therefore, have my approval. At the same time your Government will doubtless carefully watch the progress of further experiments, bearing in mind the importance of complete investigations being made as to the existence of petroleum nearer to the Sind-Pishin line than Khattan before that place is finally selected for operations.

5. I shall be glad to be kept informed of the results of this important investigation, and have noted that no steps will be taken towards the possible construction of a railway to connect Khattan with the Sind-Pishin line without a previous reference to this country. At the same time it may be suggested that the possibility of conveying the petroleum in pipes at less cost than by railway may usefully be considered.

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No. 73 (Public Works), dated the 13th December 1887.

From—The Government of India,

To—The Secretary of State for India.

In the concluding paragraph of Despatch No. 48, Public Works, of 4th November 1886, Your Lordship expressed the wish that the results of the petroleum investigations which are being carried on at Khattan should be reported by our Government. It was also suggested that the possibility of conveying the petroleum in pipes rather than by railway might be usefully considered.

2. Our Hon'ble Colleague Sir Theodore Hope has lately visited the site of the operations and personally enquired into the whole matter. We enclose a Minute written by him which gives full information concerning all points of interest connected with the operations.

3. There appears to be no reasonable doubt that the supply of the thick petroleum suitable for consumption in the locomotives of the Sind-Pishin Railway is fully assured; the only difficulty which remains to be overcome is that of the carriage of the oil from Khattan to the Railway. Your Lordship will see that the question of the possibility of a pipe line will not be neglected.

4. The unfortunate hindrance to the operations caused in the working season of 1886-87 by the delay in the arrival of the new machinery from Canada has prevented any boring being yet carried down to a sufficient depth to prove or disprove the existing of the lighter oils. But the doubt which there still is on this point does not at all detract from the value of the oil-field for the purpose of supplying fuel to the Sind-Pishin Railway.

5. We have caused careful investigations to be made as to the existence of petroleum nearer to the Sind-Pishin line than Khattan; but there seems little prospect of oil being found in the neighbourhood of the railway. Mr. Townsend, the Superintendent of the Petroleum Operations in Baluchistan, has submitted a report on the matter, which we forward for Your Lordship's information.

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*Minute on the Khattan Oil Works by the HON'BLE SIR THEODORE HOPE, K.C.S.I., C.I.E., dated 21st November 1887.*

The 13th, 14th, and 17th November were devoted to an excursion to these Works. I was accompanied by Mr. R. B. Buckley, Under-Secretary to the Government of India in the Irrigation and Civil Works Branch, which comprises Coal, Petroleum, and Iron. At Khattan I found awaiting me Major A. C. Bigg-Wither, Joint Secretary, Public Works Department, to the Governor General's Agent in Baluchistan, and Mr. T. W. Bartlett, an Executive Engineer, who had been deputed by the Director, North-Western Railway, to carry out whatever further surveys in connection with the Works might be found necessary.

2. On the 13th instant Mr Buckley and I rode from Baber Kuch Station to Khattan (45 miles), following as closely as possible

Means of access. the route surveyed last season for a light 2' gauge railway by Mr. C. H. Croudace. According to his project, the line would be 43 miles long; the ruling gradient would be 1 in 45, but only 14 miles would be as steep as 1 in 50 and under; the curves would be sharp in many places; and the work would be generally light, excepting for the last ten miles into Khattan, which run through the deep and narrow gorges of the Chakar river and the Khattan *nala*. As permanent-way it was contemplated to use the 40lb rails available from the conversion of the "Salt Branch," and the locomotives and stock were to be those set free by the completion of the Ferozepore bridge supplemented by specially designed oil trucks. The estimate was Rs. 9,22,364, but Mr. Molesworth and Mr. J. Ramsay concurred in deeming the rates too low, and raising the total to 15 lakhs. The actual outlay, however, would come to about 3 lakhs less, after allowing for the permanent-way and stock in hand.

3. From the above sketch it will be gathered that the first 33 miles of the proposed line present no engineering difficulties, and would not be expensive. But the objections to a river-bed location for the remaining ten miles, where the floods are said to rise 30 feet, and the cost of placing the line above flood level, which Mr. Croudace puts at an extra 10 lakhs, and Mr. Buckley at even more, seem to me to render the scheme, or at least this river section of it, impracticable. If Khattan should develop into a great oil centre, it is conceivable that the 33 miles of railway might be made, leaving the remaining 10 miles as an annually remade river-bed road. I do not, however, recognise that a railway is yet proved to be indispensable for sufficient communication with Khattan. For the present at any rate, we must do all we can to ensure the necessary means of transit being otherwise devised.

4. On the 14th instant some nine hours were devoted to examining, on foot, other alternatives of access to Khattan.

The first claiming attention was that suggested by Mr. Townsend for piercing two dykes of limestone in the long Biburgi range, south of Khattan, beyond the Siah Kuch valley, and then descending to the plains in the Sibi direction. After ascending the top of the ridge (3,350 feet high) and examining the dykes and gorge, Major Bigg-Wither and Mr. Bartlett concurred with me in the opinion that this route was impracticable. In order to reach the gorge, it would be necessary to surmount a saddle and run down at very steep gradients; a tunnel at the side of the gorge would then be required, and beyond it the descent presented a chaos of ridges at right angles to the line, mostly composed of vertical strata of unreliable and rapidly decomposing material. Although the entire crossing would be effected at a lower level than was obtainable elsewhere, the difficult nature of the country to the south of the range, coupled with the long detour which the subsequent turning of the hills in order to reach Sibi would involve, seemed to me to place the project quite out of the question.

The survey of this alternative, ordered in the letter to the Director General of Railways, No. 1019 R.C. of 27th September last, may therefore be unhesitatingly abandoned.

5. The next alternative examined on the 14th was that which has been described in much detail by Lieutenant E. H. Hemming in a very full and careful report made in 1885, which will be found in Proceedings, C. W. (Coal and Iron), September 1886, Nos. 1 to 39. Proceeding first to the Kotal between the Biburgi and Maurani ranges, which is indicated in Lieutenant Hemming's plan as B, where a small cultivated plain is found, Mr. Bartlett and I (the

others having returned to Khattan) went to the top of the highest hill in the range to the southward (about 4,000 feet), which is termed Gosain in the latest Surveyor General's sheet, on a scale of 4 miles to 1 inch, and commands a vast expanse of country in all directions. As far as it is possible to judge from one point, the general opinion formed by Lieutenant Hemming seemed to be fully confirmed, namely, that the line is good in general direction, the straightest possible between Khattan and the Railway; affording fair gradients rarely approaching 1 in 20; for many miles practically level; and rising continuously until the saddle and single fall into Khattan are reached; but that, on the other hand, the advantage of direction will be to a great extent nullified by inevitable tortuousness in construction; the cutting and minor bridging will be very heavy; and the difficulties of obtaining water and collecting labour considerable.

The prospects of this route are thus not very encouraging, but they appear to justify more close examination of a nature which will be presently described.

6. On the 15th Messrs. Buckley and Bartlett returned with me to Sibi by the road (termed Beckett's), which was made by the Baluchistan Agency officers in 1884-85. It is 65 miles long. For the first 15 miles the Biburgi range is crossed by innumerable zigzags; about 14 miles more carry the line to the level of the plains beyond Tratani; the remainder is a dead level across the "Pat" or desert. This road combines the disadvantages of extreme steepness and exposure to floods with that of inordinate length, and although, by dint of extensive repairs after rain, it is now the best way of reaching Khattan, the labour and cost of transporting stores and machinery by it are enormous. Considerable outlay in providing a better access would certainly be justifiable, and in the end remunerative.

7. I now pass on to the essential point of the oil  
Supply and quality of oil. itself. It will be remembered that in September 1886 the position was this—

- (1) The suitability of the oil for locomotive and lubricating purposes had been established by thorough experiment on the North-Western Railway; but the qualities necessary for making kerosine oil for illuminating purposes were wanting.
- (2) An annual supply of 50,000 barrels (1 barrel=35 gallons) had been ascertained to be sufficient to work the whole Railway from Ruk Junction to Baluchistan.
- (3) It was calculated that even after investing 20 lakhs of rupees on a connecting railway, and allowing interest at  $6\frac{1}{2}$  per cent. on that and all other capital outlay, the oil could be delivered on the main line at a price which would effect an annual saving of two lakhs of rupees, compared with the price of coal.
- (4) Although the indications of an abundant supply of oil suitable for fuel were very promising, it was deemed necessary to sink wells sufficient to establish the fact, and also to obtain from Canada boring machinery powerful enough to bore to a depth of 2,500 feet, in order to search for lighter oil suitable for illuminating purposes.

The new boring apparatus did not arrive as soon as had been anticipated, and the rainfall last cold weather was so abnormally scanty that little could be done before the hot weather beyond conveying the whole to Khattan. Work was, however, started energetically in September last.

8. At the time of my visit four wells were in working order, two of them being fitted with deep boring machinery. The whole plant and arrangements



were carefully examined from a technical point of view by Mr. Buckley, and I cannot do better than give the following quotation from his Note on the subject:—

“There appears to be every reason to feel confident that an abundant supply of thick black oil is assured. Mr. Townsend is now fully confident of this. He says that he feels certain that this oil will be found, at 100 to 120 feet in depth, at any point where a boring may be made between the present wells and the foot of the hills some two or three miles up the valley in which Khattan lies.

“There are four wells or borings at Khattan. Two of these are now more than 500 feet deep, the other two are shallow wells. Wells No. 2 and No. 4, the latter being a deep well and the other a shallow one, were pumped on the afternoon of the 14th while we were at Khattan. No. 4 had never been pumped before. From this well the oil was pumped into a tank which has been newly constructed to hold about 500 barrels of oil.

“I roughly gauged the quantity of oil which was discharged from the wells by the pumps by timing the discharge into a two-gallon bucket. The results were:—

No. 2 well	4 gallons per minute	=164*	barrels per day.
„ 2 „	6 „	=246 „	
„ 4 „	10 „	=410 „	

“The pump in No. 2 well was said to be working indifferently, and that the discharge was less copious than usual. Very little water was pumped in either well—almost entirely pure oil. The oil was discharged into the tanks through iron pipes about 60 feet long, lying at a slope of about 1 in 20 or 25. The pure oil, which seemed to have about the consistency of rather thick treacle, ran freely in the pipes. The pipe leading from No. 4 well was about 5”, perhaps 6” diameter: the discharge of 10 gallons a minute occupied but a small proportion of the bore as far as one could tell from the mouth of the pipe; certainly the pipe was not nearly one-third filled. This fact has some bearing on the possibility of conveying the oil by a pipe line.

“The specific gravity of the oil at 109° temperature, Mr. Townsend informed me, is the same as that of water; as it cools it contracts and the specific gravity increases. The oil lying in the tank of No. 2 well was, apparently, almost exactly of the same specific gravity as water. There was a layer of oil some 9” thick over a layer of water, under which again was some two feet of oil. The oil and water will flow together; they did so when the pump was discharging both together from No. 4 well when the pumping commenced.

“This is a most important point. There is no reason to doubt that two out of the four wells which are now ready can deliver at once the full quantity of oil which is likely to be required for the North-Western Railway. It is only necessary to transport the oil to the Railway.”

There thus seems no room for doubt that the supply of oil will be sufficient to work the whole Sind Section of the North-Western Railway, say up to Khanpur or Multan, and also to meet any commercial demand which may arise for fuel, gas, lubrication, and the like.

9. Although the heavy oil may thus be deemed assured as a valuable product for railway and commercial purposes, there can be no question as to the desirability of continuing the search for the lighter quality which is suitable for the manufacture of kerosine and for illuminating purposes generally. Doubts are entertained in some quarters as to the possibility of any local oil competing with the American and Russian oils at their present low prices, and in others, as to the continuance of these prices, which are affirmed to be the result of a ruinous competition. Without pronouncing on such points at present, it seems to me obvious that the general character and reputation of the Khattan field, and the attraction of capital towards it, would be enhanced by its capacity being ascertained to be two-fold, and also probable that in the long run cheap Indian labour and proximity to the markets would ensure the predominance of the local product. Mr. Townsend's instructions, therefore, are to pursue with unremitting

\* 35 gallons=one barrel.

vigour one deep boring at Khattan itself. It has also been arranged that he shall at once transfer the second deep boring apparatus to a site about two miles higher up the valley, where he affirms excellent prospects to exist, and carry it also down to its full depth, if necessary. The extent of the oil-field will thus be tested, and a new distinct chance afforded of finding both heavy and light oil.

10. The character of the oil itself being thus established, we may pass to the question of how it can be best conveyed to the main line of railway. The superiority over other methods of a pipe line, if practicable, is of course obvious. The idea has been in view from the first, and is alluded to in paragraph 5 of the Secretary of State's Despatch No. 48 P. W. of 4th November 1886, but the general opinion hitherto entertained has been that the oil was too viscous to admit of the adoption of this mode of transit.

11. Mr. Buckley is, however, disposed to question this conclusion, and the subject was much debated during my visit. I extract the following remarks from his note already alluded to:—

"It appears to me that this point merits very careful investigation before any expenditure is incurred on the construction of a railway through the very difficult country in the neighbourhood of Khattan.

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"A really secure railway, then, by Mr. Croudace's route would cost 25 lakhs or more. Other routes are under consideration and may perhaps prove to be less expensive than the one laid out by Mr. Croudace; but it seems to me at least doubtful whether this will prove to be the case. In any case the working expenses and maintenance of such a railway must be a heavy charge, which will increase very materially the cost of the oil delivered at the Sind-Pishin Railway.

"I gathered from conversation with Mr. Townsend that he attaches less importance to a railway to Khattan than appears to be the case from his letter of 16th September in the notes in Proceedings, October 1887, Nos. 60-68. In that letter the necessity for the railway is based on the desirability of affording means of carriage to Khattan for machinery, &c.; but I learn from Mr. Townsend that there is now at Khattan sufficient machinery of all kinds to deliver immediately the full quantity of oil required for the railway, and that if the means of carriage were provided the delivery of oil might commence at once. No doubt improvements and additions will be necessary; but as far as we know at present these need not be very extensive for the railway requirements. I venture also to think that Mr. Townsend's letter was written under the idea that the oil would not flow in pipes—an idea which certainly requires to be established.

"The level of Khattan is given on the map as 1,950. The level of Sibi is 495. The level of the plain near Tali, where the Chakar river debouches from the hills, is not given, but is probably about 900 or 1,000. There is, then, a fall of about 900 or 1,000 feet along the Chakar river between Khattan and the point where the river touches the plain. The length from Khattan to that point is perhaps 25 miles along the river. So that the hydraulic gradient on a pipe laid between those two places would be about  $\frac{1}{35}$ . It can only be determined by experiment whether the oil would flow at any reasonable velocity on such a slope. I am myself disposed to think that it would probably flow, at any time when the thermometer was about 80° or above it, at a velocity of about one-twentieth to one-tenth of that of water. But this is little more than a guess based on the flow which actually occurred in a pipe having a gradient of  $\frac{1}{20}$  or so.

"I believe that it is estimated that the demand of the railway will be about

50,000 barrels of oil a year.\* Each barrel contains, I understand, 35 gallons. This is, say, 5,000 gallons a day, or 3½ to 4 gallons a minute, is all that is required. A 4"

\* Proceedings, September 1886, Nos. 1-39.

pipe laid from Khattan to the point where the Chakar debouches on the Sibi plain would carry 86 gallons of water a minute. It seems to me probable that such a pipe, or possibly a smaller one, would be sufficient to carry the oil required for the railway. From the end of this proposed pipe-line to Sibi it would be a matter of the

greatest ease to lay a line of broad-gauge railway; the rails might almost be laid on the plain as it exists. Old rails would be good enough for this length, so that the cost would be comparatively small.

"If experiment should show that even a 4" pipe laid at  $\frac{1}{10}$  would not carry the requisite quantity, it would be a matter of no difficulty to pump the oil to such an elevation at Khattan as would ensure delivery. Indeed, it seems open to consideration whether it would not be a better project to carry a pipe-line through the "Maurani Tangi" gorge and down Lieutenant Hemming's line in the valley of the Nilag river. Such a line would be shorter than one by the Chakar, and as it would be necessary to pump the oil to an elevation of perhaps 400 or 500 feet above Khattan to force it over the hills lying on the Khattan side of the "Maurani Tangi" gorge, a much greater hydraulic gradient would be obtainable from the summit near Maurani to the point where the line would reach the Sibi plain near the Chakar. Roughly, it may be estimated that a hydraulic gradient of about  $\frac{1}{7}$  could be obtained by this route in the valley of the Nilag.

"Mr. Townsend\* has estimated the cost of a 4" pipe-line at Rs10,000 a mile; the estimate appears to me to be low; it would seem more probable that such a line might cost Rs20,000 a mile. But even if the cost were far larger the economy would be very great.

\* His letter of 16th September 1887, in notes in Proceedings, October 1887, Nos. 60-68.

"If this scheme proved to be feasible it would be desirable to make a road from the terminus of the railway to Khattan. Probably the best route for such a road would be much in the direction of the line surveyed by Lieutenant Hemming."

12. These remarks possess considerable force, and it has therefore been arranged that Mr. Bartlett shall commence his surveys by examining the whole line of the Chakar river, from its debouchure on the Sibi plain up to its junction with the Khattan *nala*, and thence to Khattan, with a view to obtaining a suitable gradient for a pipe-line, and a location for it above flood level, and shall then go over with a similar object the route over the Maurani saddle referred to in paragraph 5 of this note. At the same time, Mr. Townsend is to make an experiment of how the new oil now obtained will flow through a pipe at various temperatures, using for the purpose some spare casing he has in hand.

13. Mr. Bartlett will at the same time ascertain, as to both routes, the possibility of making a 12-foot unbridged and unmetalled road. Finally, he will ascertain the practicability of the Maurani route for a railway.

14. The uncertainty and bad quality of the water-supply was brought very

Water-supply.

prominently forward by what we saw and heard at Khattan. The various substances, mineral and animal, by which the water is liable to be impregnated, are nauseous or offensive, and must certainly be very detrimental to health. It is a wonder how Mr. Townsend and his assistants have endured them so long and so uncomplainingly. Mr. Buckley thus writes on the subject:—

"Two schemes were suggested during the Honourable Member's visit to Khattan. The first scheme was to construct a series of tanks in a rocky gorge just above Khattan on the Chakar river. There were several places in the gorge where tanks could be made by the construction of dams of moderate height 15 to 20 feet. There was also a place at the head of the gorge where a dam, about 150 to 200 feet in length, would, it was said, impound a lake about half a mile square. No sound judgment can be made on these proposals until the gorge and the plain above it have been surveyed and cross sections taken. The slope of the bed of the stream in the gorge is rapid, and I feel doubtful whether the quantities of water which would be impounded, at some of the points which were pointed out, would be commensurate with the cost of the necessary dams. The evaporation in such a very dry climate would be considerable. From indications which presented themselves in the bed of the nullah, it appeared to me probable that very large quantities of salt were carried by the flood-waters and that the tanks might need to be frequently cleaned out. It appears that the water which is now collected in pools in the gorge is to a certain extent

impregnated with mineral matters which are not beneficial. This scheme merits investigation, more particularly that portion of it which contemplates a lake above the gorge. If the discharge off the catchment above the gorge is as copious as Mr. Townsend supposes, it would seem that it would be a comparatively inexpensive matter to form a reservoir which would improve Khattan in many ways. It is proposed to construct a small dam at once in one of the more favourable points in the gorge as an experiment; if the winter rains fall as usual this year the supply which will be impounded will be very useful. The water should be analysed from time to time to test its fitness for human consumption. Evaporation will increase the percentage of mineral matters in it.

"The other scheme contemplates the supply of Khattan from a spring at a place called Wazi, about seven miles from Khattan and 700 feet above it in elevation. One of the assistants who had been to this place said that there was sufficient water flowing to "fill a six-inch pipe." It was reported that this water was of excellent quality and that the spring was perennial. If investigation shews that these facts are correct, it would seem more than probable that this scheme is the better of the two. A pipe of one inch in diameter laid from this spring to Khattan would deliver about 6,000 gallons a day of water said to be of unquestionable purity. A pipe 1½ inch internal diameter would deliver about 16,000 gallons. I do not know at all correctly what the cost of such pipes would be laid in place, but probably Rs30,000 for 1" and Rs45,000 for 1½" would be an outside estimate for the seven miles. I think it requires proof that this scheme is not the cheaper of the two as well as the one which gives the better quality of water.

"Full investigation may probably shew that it may be desirable to carry out both schemes to a certain extent. The Wazi water should be thoroughly tested both for human consumption and for its suitability for the boilers."

It has been arranged, with the concurrence of the Agent to the Governor General, that Mr. Townsend, with the aid of Major Bigg-Wither, shall at once construct a small band, to cost about Rs2,000, at a suitable locality which was selected in one of the ravines, and shall also investigate thoroughly the Wazi water scheme.

15. Two bungalows, each containing four rooms, have been constructed to accommodate Mr. Townsend and his staff; as the Accommodation for staff. latter at present comprises six assistants and an accountant, two tents are used as well. This may pass for the present, until the extent of future operations can be more clearly foreseen. But Mr. Townsend, in his honourable desire to economise the funds of his employers as long as the existence of oil rested merely on his own anticipations, has denied to the bungalows verandas and even a single bath-room. Only men inured to the rough life of the backwoods would have tolerated such exposure and discomfort, and I do not think that they should be any longer called upon to do so. It has, therefore, been arranged to provide the bungalows with verandas along one side and a bath-room at each end.

Regarding Khattan as a residence too much can hardly be said in depreciation. A narrow and secluded gorge with high mountains on both sides, not a tree or blade of grass to be seen, and water both scanty and bad, render the place next to intolerable. If, however, the works could be eventually located in the upper part of the valley about three miles off; if a water-supply could be assured, and a fair, as well as shorter road could be made to Sibi, trees would spring up, vegetables might be grown, eminences could be found for bungalows, and the whole aspect of affairs would be changed.

16. In conclusion, I have only to express my warm appreciation of the ability and endurance with which Mr. Townsend and his assistants have doggedly prosecuted for some three seasons what at times appeared an almost hopeless enterprise, my

Conclusion.

belief that they will attain complete success, and my hope that the Government of India will then bestow on them some substantial reward.

T. C. HOPE.

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*Report by R. A. Townsend, Esq., Superintendent of Petroleum Works, Baluchistan, on the exploration of the Hurnai Valley for Petroleum, dated 3rd August 1887.*

In accordance with instructions received from the Government of India, I have, during the months of June and July last, made an examination of the Hurnai Valley in Baluchistan from Baber-Kuch to Khost, with the object of finding a suitable place for making a trial boring for petroleum near the line of the Sind-Pishin Railway, and have the honour to submit the following report on the subject.

By the kindness of the Manager of the North-Western Railway, Mr. Lightfoot, in furnishing me with a van and horse-box which were cut off and taken on at any desired station, I was able to examine many of the tributary valleys entering the Hurnai.

*Nari Gorge.*—From Nari Gorge to Spintangi the rocks are of comparatively recent origin and consist of clays, sandstones, and conglomerates, of pliocene and recent date, and are too far above the geological horizon of the oil-bearing rocks of this part of the country to be worth consideration.

2. *Spintangi.*—At Spintangi the railway penetrates, by a tunnel, the first, in ascending order, of the limestone rocks of tertiary age, which are here thrown from the horizontal to the vertical, in which position they are traceable for a long distance to the north and west on the left of the valley, the latter being about one-half mile wide at this point.

On the right or east side is a continuation of the "Hog Back" range, which is cut by the Chupper Rift, and which, with some irregularities, borders the right of the valleys traversed by the Sind-Pishin Railway all the way from Spintangi to Khost.

3. *Geology.*—As all this section has been described geologically by Blandford and others, I shall confine myself to such features as have a bearing upon the specific object of my examination, *viz.*, the discovery of a promising site for a boring for petroleum and the finding of coal or other workable minerals, adding only the fact that from the nummulitic limestone pierced by the tunnel above named, across the valley to the base of the opposite range, the rocks are a duplicate of the system described in my report of the "Petroleum Exploration at Khattan," published last year, along with Mr. Medlicott's "Notes on the occurrence of petroleum in India."

With that report is shown a section of the Khattan Valley embracing strata numbering from 1 to 33 inclusive.

The tunnel rock at Spintangi may be said to represent No. 1, and the outer stratum of the high smooth grey limestone range opposite, No. 33 of the Khattan Section, the latter (No. 33) dropping below the river level at about a mile to the west where the road to Duki enters an intersecting valley.

Looking along the range towards the south from the junction of these two valleys, one is struck with its beautifully smooth and perfectly arched surface; it is one of the most perfect of the many fine anticlinals of similar rocks which are to be seen hereabouts.

4. *Stalagmite and sulphur springs.*—East of, and almost opposite, the bazar at Spintangi there is a peculiar fan-shaped deposit which rises vertically

from the river bed to a height of about 20' and extends back to the base of the hills filling a  $\Lambda$  shaped indentation in the latter. This on examination proves to be a stalagmite deposit, about 2 acres in extent, derived from the waters of an active sulphurous spring located near the neck of the  $\Lambda$ . Its composition is chiefly carbonate of lime and crystals of sulphur; the water is also alkaline, and from this active spring a constant accretion to the mass is being made.

At the edge, on the river, a curtain-like overflow has produced some very pretty forms and petrifications by falling on coarse grasses and shrubs growing below.

Besides this there are 15 or 20 other similar springs extending along the base of the hill, at intervals for about two miles round to the north and east. The spring farthest east is much the largest, and has the most copious flow.

The waters from these are identical with those from similar springs at Khattan, except that they have the normal earth temperature, while those at Khattan are "hot springs."

5. *Old Springs*.—Many gorges or cuttings in the sides of the hill show the springs to have been active ages ago at higher levels, and for miles along the base of the range there is a deposit from these old flowings from 10' to 30' in thickness, of carbonate of lime of a porous spongy nature, lying horizontal, and in one place extending for a mile or so across an adjoining plain.

A rift in the range, 3 miles south, shows shales and hard grey limestones to be the rocks below the surface stratum.

I have described these springs because they have been instrumental in helping me to a decision that petroleum does not exist in the rocks hereabouts as so many and such copious flowings, having most likely a deep-seated origin and must necessarily bring to the surface evidences of hydrocarbons if present in the locality; globules of oil are brought to the surface by the springs at Khattan.

There is no change in the character of the rocks on either side of the valley from Spintangi on to Chupper Rift, except that the ranges, right and left, are separated by a great widening of the valley at various places, such as Sharig, where it is from 7 to 8 miles wide, and where such limestones as are exposed at Spintangi are covered by river gravels and sands, right up to the base of the range on the right.

6. *No Petroleum*.—A careful examination of the country within a reasonable distance of each station has been made, and no traces of petroleum were found, nor, excepting valueless coal seams and hematite deposits, did I find any minerals of value. (I except in this statement the coal at Khost.)

7. *Chupper Rift*.—At Chupper the celebrated rift cuts through a range precisely like that at Spintangi, and exposes rocks geologically lower than any so exposed at Khattan, but having the same order of deposition as those penetrated by the borings made in the latter place.

In one of the railway cuttings on the east side of the rift there is a 4" seam of highly carbonaceous material, having a black micaceous appearance. Beyond this and the carbonaceous nature of the lowest shales exposed in the rift, I saw nothing to indicate the presence of oil, other than a similarity of rocks to those of Khattan.

A little beyond Sharig upper eocene and miocene rocks only border the railway, and the range of grey limestone, which is no doubt lower eocene, is seen far to the north only, and this character of formation continues with but little change to Kach, where the disturbance is so great as to require a careful study to correctly describe the folded and contorted strata of the locality.

8. *Coal*.—By the request of the Manager of the North-Western State Rail-

way I spent two or three days at Khost—a station beyond Sharig—and there examined the coal seams lately discovered.

I have sent in to Mr Lightfoot a report on the subject, and will forward a copy of it as an accompaniment to this paper.

When at Khost I received orders from the Agent to the Governor General for Baluchistan to go promptly to Quetta, and did so.

While conducting this exploration I was most anxious to find some traces of petroleum, or some surface evidences which might warrant the prosecution of a trial boring, well knowing that the Government of India would be glad to avoid the construction of a railway into the Khattan district, particularly as that field can scarcely be said to have cleared the experimental stage. Well knowing also the difficulties and privations which are encountered at Khattan, I had a selfish interest in finding a better spot for operations, and it is with regret that I am obliged to state on this paper that while the rock formation in most geological features from Spiutangi to Chupper Rift and beyond are identical with those at Khattan,—conscious of the uncertain and erratic nature of petroleum deposits in Europe and America, and that from “whatever source petroleum may have originated, it now saturates porous strata, not of any particular geological age, but runs through a vast accumulation of sediment from the oldest to the newest rocks,”—and finding no actual traces of petroleum in any of the rocks examined, I had nothing better to guide me than a knowledge that I was investigating rocks which extend from Hanover on the North Sea through Galicia, the Caucasus, the Punjab, Assam, and Burma, to Java, along which petroleum is found at the surface in many places, and which having one place yielding like Baku, *may* somewhere within so tremendous an area as is enclosed by India, hide another or others equally prolific and valuable.

9. *Conclusion.*—Under such circumstances I am obliged to say that at no point did I see any indication which would place the making of a test boring out of the class known in America as “Wild cat ventures,” or borings purely prospective, or none which would induce me as a miner with private capital to make the venture.

This report has been delayed by my attention to office work in transfer to a new supervision.

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#### 4.—Burrakur Iron Works.

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(No. 26, Public Works, dated 16th May 1887.

From—The Government of India,

To—The Secretary of State for India.

We have received Your Lordship's Despatch No. 50 P.W., dated 11th November 1886, commenting upon the accounts of the Burrakur Iron Works, which we submitted to Your Lordship with our letter No. 279 (Financial) of 4th September last.

2. In reply to these comments, we have the honour to explain to Your Lordship that we considered it preferable to send the accounts forward as they had been received by us, with such explanations as it was in our power to offer, rather than to incur the delay that must inevitably have ensued had we first endeavoured to clear up all the doubtful points; and that it was our intention to assemble a Committee on the arrival of our Government at Calcutta, with the object of placing the system of accounts, once for all, on a satisfactory basis.

3. We have now the honour to forward the report of a Committee that assembled for this purpose in February last; and we may add that we have requested the Government of Bengal to submit their accounts in future in accordance with the forms drawn up by the Committee.

4. It will be observed that in the revised accounts a liberal allowance has been made to cover depreciation on block and plant, and also that the working expenses have been further debited with an estimated charge for direction, accounts, and stationery. In other respects the accounts are substantially the same as those prepared for Your Lordship by our Accountant General, but to facilitate comparison we append a memorandum explaining the variations in the two accounts.

5. The balance sheet attached to the report shows that at the end of the financial year 1885-86 the profits had amounted to Rs68,388. The works started in February 1883 with a capital (represented by the purchase money) of Rs4,66,127, to which there has been subsequently added by the Government of Bengal during the 37 months since the opening, a sum of Rs1,69,948, from which additions to block and plant and the necessary working capital have been provided.

Assuming the mean capital embarked in the undertaking during the period February 1883 to March 1886 to have been Rs5,46,601, the profits will have averaged about 4·06 per cent. per annum.

6. These results are sufficiently encouraging to warrant the continuance of the works even with their present restricted appliances. The selling price per ton of pig-iron at the works is from Rs40 to Rs44 as against Rs48 to Rs49, which we have ascertained to be the price of No. 1 Gartsherrie pig in Calcutta; and if a larger demand for pig-iron could be anticipated than at present exists, there is scarcely room to doubt that a further capital expenditure of a few thousand rupees on blowing apparatus for the second blast furnace, which has not yet been put into work, would materially add to the economy of the working.

7. But though the market for cast-iron is certainly improving, it is through the manufacture of rolled merchant iron, for which the market is practically unlimited, that we would rather look for the future prosperity of the works.

8. It has been estimated that with a Capital expenditure of from 2½ to 3 lakhs the necessary machinery can be erected at Burrakur, and that rolled bars could then be produced at a cost of from Rs70 to Rs75 per ton, as against the present selling rate in Calcutta of Rs95. For the above outlay rolling mills and converters could be set up capable of making an outturn of 20 tons of bar iron a day, a quantity which would at once command a ready sale in the market.

9. With so large a margin to fall back upon, the advisability of extending the works in the direction suggested appears to us to be beyond question, and we are inclined to think that if Government would undertake this further development the chance of disposing of the works to a private company would be much increased. Should it, however, be found feasible to sell the works in their present condition we are at once prepared to make them over, but we are strongly of opinion that the purchasing company should be in a position to carry out the extension immediately on taking possession, and that it should be one of the conditions of the sale that the extension should be carried out. The manufacture of steel should, of course, be also secured if possible, as contemplated in our Resolution No. 2899, Finance and Commerce, dated 4th August 1882.

10. In view, however, of the time that must inevitably elapse before arrangements for the sale of the works can be effected, we trust Your Lordship will be pleased to give effect to our suggestion that the enlargement of the works should be at once undertaken by Government, and that for this purpose we may be



permitted to make an advance to the Bengal Government, not exceeding 5 lakhs of rupees, on such terms as we may hereafter arrange with that Government. This will provide the necessary machinery for the manufacture of rolled merchant iron and provide sufficient working capital to allow of the works being carried on in a satisfactory manner. It is probable that the advance need not exceed 4 lakhs, but we desire to have power to make advances up to 5 lakhs, with a view of providing for possible unforeseen contingencies.

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**SECTION VIII.**  
**Telegraphs.**



## TELEGRAPHS.

Extract from the Proceedings of the Government of India, Public Works Department,—No. 135 T.E., dated 21st October 1887.

*Reorganisation of the Establishment of the Indian Telegraph Department.*

Read again—

Resolution of the Government of India, in the Public Works Department No. 186—9 T.E., dated 27th October 1881.

Despatch No. 8 T. of the 12th June 1885, from the Government of India, to the Secretary of State for India.

Despatch No. 27 T. of 26th November 1885, from the Secretary of State for India, to the Government of India.

Despatch No. 3 T., dated the 2nd February 1886, from the Government of India, to the Secretary of State for India.

Resolution No. 17 T.E., dated 8th February 1886, of the Government of India, in the Public Works Department.

Despatch No. 14, dated the 8th July 1886, from the Secretary of State for India, to the Government of India.

Despatch No. 22 T., dated 1st November 1886, from the Government of India, to the Secretary of State for India.

Despatch No. 4 T. of the 15th March 1887, from the Government of India, to the Secretary of State for India.

Despatch No. 7 T., dated the 27th May 1887, from the Government of India, to the Secretary of State for India.

Read also—

Despatch No. 13 T., dated 25th August 1887, from the Secretary of State for India, to the Government of India.

**OBSERVATIONS.**—The question of the reorganisation of the Superior Establishment of the Telegraph Department has, for some years past, commanded the earnest attention of the Government of India and of Her Majesty's Secretary of State for India. The question has been rendered difficult and complicated by the fact that, owing to the very rapid development of telegraphic communication in India, it was necessary at one time to very largely increase, in a comparatively short period, the number of the officers in the Telegraph Department. This sudden expansion of the Department has produced the block of promotion which unavoidably attends all spasmodic recruitment.

2. The measures, which, after the correspondence quoted in the preamble, have finally been sanctioned by Her Majesty's Secretary of State for India to relieve the disadvantages which for some years have pressed hardly on some members of the Telegraph Department are of a dual nature. They provide : first, special inducements for the retirement of officers of a certain standing in the Department ; secondly, special personal allowances to those officers whose promotion is, and may probably continue to be, retarded beyond a certain point.

3. In addition to these special and temporary measures, it has been decided, on grounds which are independent of the present abnormal circumstances of the staff, to reorganise the classes and grades of the department on a new basis.

4. A Resolution, No. 136 T.E. of this day's date, has been issued by the Government of India, with reference to the special retirements. The following Resolution deals with the second of the points mentioned above, and with the general reorganisation of establishment.

5. It appears desirable to explain, to some extent, the probable action of the orders which are now promulgated. It may be well, first, to state the established axiom that it is not possible to devise means which will equitably distribute true promotion, that is, promotion to higher duties and more responsible positions, in a department which has been spasmodically recruited. The spasmodic recruitment has been very marked in the Telegraph Department, especially in the "blocked years" 1868 to 1871; and it is out of the power of Government to equitably distribute true promotion to all the officers recruited in those years. All that can be done is to soften to some extent, by personal allowances, the effects of the retardation in promotion, and to offer to those who may consider these allowance insufficient an opportunity to retire from the Department on reasonable terms. The terms of retirement which are stated in Resolution No. 136 T.E. of this date are offered with a double object, first, that those who are dissatisfied may retire, and, secondly, that the number in the "blocked years" may be reduced, so as to be more nearly in accordance with normal conditions. If the second object is not attained as the result of the concessions made in Resolution No. 136 T.E. the flow of true promotion, that is, of promotion to higher duties as well as higher salaries, cannot possibly be established. But if a sufficient number of officers do retire *from the blocked years*, under the terms of Resolution No. 136 T.E. a more healthy condition of affairs will ensue.

6. It cannot be too clearly explained that the system of personal allowances sanctioned in Section III of the following Resolution, is one which does not contemplate increase of pay commensurate with length of service alone. It is a system in which the rate of pay is determined partly by length of service and partly by departmental rank. The effect of the orders conveyed in the following resolution is to give immediate increase in pay to a considerable number of officers: but there is every reason to suppose that for some years to come the amount of departmental promotion will be largely dependent on the retirements which may take place under Resolution No. 136 T.E. It is necessary also to remember that the scale which has been temporarily sanctioned by the Secretary of State is more favourable than that which will ultimately be in force (Section II) when the Department is in a more normal condition. The period of transition from the one scale to the other must necessarily be a period in which permanent vacancies on the first scale may fail to give any promotions on the revised one.

7. These considerations show that unless the concessions offered in Resolution No. 136 T.E. induce retirements, *from the blocked years*, on a scale commensurate with the difficulties of the situation, not only will true departmental promotion be retarded, but it is also probable that the personal allowances may fail to carry the full advantage which they will have if the number of retirements is sufficient. The scale of personal allowances now sanctioned supersedes entirely the one which is now in force.

8. In short, the measures which are now promulgated leave the solution of the problem to a large extent in the hands of the officers of the Department. Liberal terms of retirement are offered. If a sufficient number of officers avail themselves of the privileges offered, the condition of those who remain will be all that can be reasonably expected: but on the other hand, if a large majority elect to remain in the department on the conditions of service which are now

plainly stated they must be content to accept the rate of pay which the sanctioned scale, with the attendant personal allowances, will afford.

9. The Secretary of State has specially desired that it should be intimated to the officers of the Telegraph Department that the present orders finally dispose of all matters with which they are designed to deal.

**RESOLUTION.**—In accordance with the decision of the Secretary of State, the Governor General in Council directs the publication of the following orders regarding the establishment of the Indian Telegraph Department:—

I.—The Superior Establishment will be divided into six classes as at present, that is—

Officers of Direction . . .	{	Class I, Director General.
		„ II, Deputy Director General.
Superintendents . . .	{	„ III, Directors.
		„ IV.
Assistant Superintendents . .	{	„ V.
		„ VI.

There will be no alteration in the numbers or salaries of the first three classes; these will remain as sanctioned in Government of India Resolution No. 186—9 T.E. of 27th October 1881, that is:—

	R
Class I—1 Director General . . . . .	3,000
„ II—1 Deputy Director General . . . . .	2,000
„ III—2 Directors . pay as Superintendents, 1st grade, +	R100

The Superintendents will be divided into three grades according to the following scale:—

	R
Class IV {	4 first grade . . . . . 1,125—75—1,500
	9 second grade . . . . . 1,000
	15 third grade . . . . . 850

The numbers in the grades in this class will be subject to alteration as explained in Section II. The title of “Chief Superintendent” will, in future, be applicable only to Superintendents of the first grade.

The Assistant Superintendents will be divided into two classes of two grades each, according to the following scale:—

	R
Class V {	20 1st grade . . . . . 700
	20 second grade . . . . . 550
Class VI {	16 1st grade . . . . . 400
	16 (or the actual number present) second grade . 300

The numbers in the grades in these classes will also be subject to alteration as explained in the following section:—

II.—It is intended that the strength of the Superior Establishment shall be ultimately fixed at a total of eighty-four members, inclusive of all the classes mentioned in the last section. There may be considerable fluctuation in the numbers, owing to the retirements under Resolution No. 136 T.E. The Government of India will fix, from time to time, the numbers which are to be allowed in each grade. The scale which will be ultimately adopted is that given in the fourth column of the statement below. It is not possible, until the action of

Resolution No. 136 T.E. is known, to define the manner in which the reduction of the scale will be effected :—

Grades.		Rate of Salary.	Gradation now sanctioned.	Gradation to be ultimately worked to.
		R		
Classes I, II, and III, Directors		.	4	4
Class IV, Superintendents, 1st grade.		1,125—75—1,500	4	4
	Ditto, 2nd „	1,000	9	10
	Ditto, 3rd „	850	15	12
Class V, Assistant Superintendents, 1st grade		700	20	12
	Ditto Ditto, 2nd „	550	20	13
Class VI, Ditto		Ditto, 1st „	400	16
	Ditto	Ditto, 2nd „	300	16 or the re- mainder if less than 16
Total			104	84

III.—The following scale of personal allowances will be given, in addition to the rates of pay defined in Section I, in those cases where the Government of India is satisfied that the officer has earned it by meritorious service :—

Assistant Superintendents, Class V, 1st grade, may receive a personal allowance of R100 monthly, after 22 years' service.

Assistant Superintendents, Class V, 2nd grade, an allowance of R100 monthly, after 17 years' service.

Assistant Superintendents, Class VI, 1st grade, an allowance of R100 monthly, after 12 years' service.

Assistant Superintendents, Class VI, 2nd grade, an allowance of R50 after 7 years' service.

The personal allowances will lapse in each case on the promotion of the officer concerned to the next superior grade. But if his length of service is such that it will qualify him for a personal allowance in the higher grade he will be eligible for that allowance.

IV.—Officers who, previous to the 1st October last, held the substantive rank of 2nd grade Superintendents will be allowed the option of electing either for the new pay (R1,000) of that grade or for the pay of the grade as it is at present (R900—30—1,050). These officers must make their election before the 31st of December next, and will be allowed to draw their pay with effect from the 1st October, according to their election. Until an officer has made his choice, he will draw pay under existing rules. Any officer who does not declare his determination before the 31st December next will be placed permanently on the new rate of pay (R1,000) with effect from 1st October 1887.

V.—Any officer who is placed in Class VI under the terms of this Resolution will continue to draw the increments which may fall due to him under existing rules: but he will not be entitled to the personal allowances pertaining to Class VI. All officers who join the department in India after the 1st October 1887 will draw pay on the new scale laid down in Section I.

VI.—Any officer of the Telegraph Department whose salary, including any acting and personal allowances which he may be drawing, was, on 30th September, higher than that to which he becomes entitled by this Resolution will continue to draw the excess as a special personal allowance, until he is promoted to a higher grade with at least equal emoluments. All acting allowances other than those which may be given under Section VIII will cease, with effect from 1st October 1887.

VII.—Until further orders all permanent promotions in the Telegraph Department will be made with effect from the 1st April and 1st October in each year. These half-yearly promotions will be regulated by the scale which may be laid down by the Government of India under Section II.

VIII.—Officiating promotions in the place of officers absent on furlough will in future, only be made from class to class (and not from grade to grade).

Officiating promotions in the place of officers absent for periods not exceeding three months will be made only in cases where the duties of the officer promoted are changed.

The officer promoted to the higher class will draw pay under the rules in Chapter IV of the Pay and Acting Allowance Code.

In the case of an officer officiating in a higher class any personal allowance will be in abeyance to the extent of the acting allowance drawn.

IX.—Permanent promotions, both from class to class and from grade to grade, will be made in the place of officers absent on "Foreign Service"; on the reversion of such officers to the Department promotion will be retarded until the normal scale is re-established.

X.—The total establishment of the Telegraph Department, including the class of Sub-Assistant Superintendents, remains subject to a maximum of 165, as previously determined by the Secretary of State for India.

XI.—The orders conveyed by this Resolution supersede all previous orders regarding the organisation of the Superior Establishment of the Indian Telegraph Department.

ORDER.—Ordered, that copies of this Resolution be forwarded to the Department of Finance for record.

Also, that copies be forwarded to the Director General of Telegraphs and to the Accountant General, Public Works Department, for information and guidance.

Also, that a copy be published in the *Gazette of India*.

*Extract from the Proceedings of the Government of India, Public Works Department,—No. 136 T.E., dated 21st October 1887.*

*Special Rules for the retirement of Officers of the Indian Telegraph Department.*

READ again—

Telegram No. 1, dated 12th January 1886, to the Secretary of State for India.  
Despatch No. 3 T. of the 2nd February 1886, from the Government of India, to the Secretary of State for India.

Despatch No. 14 T., dated 8th July 1886, from the Secretary of State for India, to the Government of India.

Despatch No. 22 T., dated 1st November 1886, from the Government of India, to the Secretary of State for India.

Despatch No. 4 T., dated 15th March 1887, from the Government of India, to the Secretary of State for India.

Despatch No. 7 T., dated 27th May 1887, from the Government of India, to the Secretary of State for India.

Read also—

Despatch No. 13 T. of the 25th August 1887, from the Secretary of State for India, to the Government of India.



**OBSERVATIONS.**—In Resolution No. 135 T.E. of this day's date the Government of India has given effect to the final orders of the Secretary of State on the questions affecting the grading, salary, and personal allowances of the Superior Establishment of the Telegraph Department. The observations which formed the preface to that Resolution explained the intention of the Government in making the concessions which are embodied in this Resolution. It is only necessary to add that, as far as the interests of the service will permit, the Government of India desire to place no restriction on retirement under the following rules: but it will be necessary to bear in mind the fact that the officers in the "blocked years," that is, those who joined the Department in 1868, 1869, 1870, and 1871, have the prior claim to the privileges now conferred.

**RESOLUTION.**—With the sanction of the Secretary of State, the Governor General in Council is pleased to issue the following rules for the retirement of officers of the Superior Establishment of the Telegraph Department:—

I.—All officers of the Telegraph Department who have now served for eighteen years, of which not less than sixteen years have been spent on "active service," are eligible for retirement from the Department.

Pension on the following scale will be granted to those officers whose resignation may be accepted—

(a) The pension which would be due under existing rules if the officers concerned were retiring on medical certificate.

(b) An additional pension calculated at the following rate:—

	Rs
To officers under 50 years of age . . .	1,000 per annum.
To officers in their 51st year . . .	900 ditto.
Ditto 52nd ditto . . .	800 ditto.
Ditto 53rd ditto . . .	500 ditto.

provided that the resignation of the officers concerned is submitted to the Government of India on or before the 31st March 1888. On the 1st April 1888 the privilege will be entirely withdrawn from all officers who have served for 18 years or more on the 1st October 1887, and who have sixteen years' "active service" to their credit on that date.

Officers who have completed their 53rd year will be entitled to no extra pension, but may retire before the 1st April under the provisions of clause (a) above.

II.—Similarly, all officers who, at a date subsequent to the 1st October 1887, reach the qualifying stage of having served not less than eighteen years, of which sixteen have been spent on "active service," are eligible to retire on the same terms as stated above, provided that their resignations are received by the Government of India within six months of the day on which they attain to the necessary qualifications.

III.—When an officer has tendered his resignation through his superior officer, it is obligatory that the application should be submitted for the orders of the Government of India; and it cannot be cancelled except with the approval and sanction of Government.

IV.—The Governor General in Council reserves the right to accept or to refuse any application for retirement under these terms, or to postpone the date on which such retirement is to take effect, according to the interests of the public service.

- V.—This Resolution is intended only to have a temporary effect. The Governor General in Council may revoke it whenever, after the 1st April next, it appears desirable in the interests of the public service to do so.
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ORDER.—Ordered, that copies of this Resolution be forwarded to the Department of Finance for further orders.

Also, that copies be forwarded to the Director General of Telegraphs and to the Accountant General, Public Works Department, for information and guidance.

Also, that a copy be published in the *Gazette of India*.

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No. 128 T.E., dated 11th August 1888.

Resolution by the Government of India, Public Works Department.

Read again—

Government of India, Public Works Department, Resolution No. 136 T.E., dated 21st October 1887.

Read again—

Despatch No. 6 of 8th June 1888, from Government of India, to Secretary of State.

Telegram of 3rd August 1888, from Secretary of State.

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OBSERVATIONS.—The practical application of the special retirement rules for the Indian Telegraph Department, which were promulgated in the Resolution read above, has shown that they produced some anomalies, and that their effect has been less favourable than was anticipated, when the Resolution was published, to the officers whose position it was desired to benefit.

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RESOLUTION.—The Governor General in Council is pleased to issue, with the sanction of the Secretary of State, the following rules which are supplementary to the rules in Resolution No. 136 T.E., dated 21st October last:—

- I.—Any officer of the Indian Telegraph Department who had less than 20 years' service counting for pension on the 31st March 1888, will be eligible to retire from the Department when he attains to 20 years' pensionable service, with the pension due to him under the rules in force (on medical certificate or otherwise), together with an extra pension of Rs1,000 per annum.
- II.—Officers who are eligible to retire immediately under the above rule, should, if they wish to avail themselves of it, take steps which will ensure their applications reaching the Government of India within six months of the date of this Resolution.
- III.—Others, who may subsequently become eligible, must, similarly, present their applications within six months of the day when they attain to 20 years' pensionable service.
- IV.—Sections III, IV, and V of Resolution No. 136 T.E. (with the alteration of the date in V to the 1st February 1889) are applicable to these orders. They are reprinted below for facility of reference.

- V.—No officer who is or will become entitled to retire under this Resolution will be allowed, after its issue, to take any furlough (other than on medical certificate) which will cause the total amount of furlough taken during his service to exceed two years; unless before taking such furlough, he foregoes the right of applying to retire under the terms of this Resolution.
- VI.—These rules, if not previously cancelled, will cease to be operative as soon as the whole of the officers appointed in 1871-72 have become eligible to retire under them.
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*Extract from Resolution No. 136 T.E., dated 21st October 1887.*

- III.—When an officer has tendered his resignation through his superior officer, it is obligatory that the application should be submitted for the orders of the Government of India; and it cannot be cancelled except with the approval and sanction of Government.
- IV.—The Governor General in Council reserves the right to accept or to refuse any application for retirement under these terms, or to postpone the date on which such retirement is to take effect, according to the interests of public service.
- V.—This Resolution is intended only to have a temporary effect. The Governor General in Council may revoke it whenever, after the 1st April next, it appears desirable in the interests of the public service to do so.
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ORDER.—Ordered, that a copy of this Resolution be forwarded to the Department of Finance and Commerce for further orders.

Also, that copies be forwarded to the Director General of Telegraphs and to the Accountant General, Public Works Department, for information and guidance.

Also, that a copy be published in the *Gazette of India*.

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**SECTION IX.**

**Establishment, Public Works Department.**



**ESTABLISHMENT, PUBLIC WORKS DEPARTMENT.****Concession of adding a certain period to service.**

No. 65 (Public Works), dated 31st October 1887.

From—The Government of India,

To—The Secretary of State for India.

In paragraph 38 of our Despatch No. 15, dated 21st April 1884, we proposed that Engineers of mature age appointed to the Department as Assistant Engineer, 1st grade, should be allowed to add a period of not more than three years to their service for pension. In recommending this we mentioned that this privilege had been hitherto restricted to men appointed above the 1st grade of Assistants before the 1st November 1873, provided they had received no bonus from a Guaranteed Company.

We also referred to a list (Enclosure No. 10 E) of officers who entered the Department after some years' practical training, but were debarred from adding a period to their service, either because they had been appointed after the prescribed date or because they were appointed as Assistant Engineer, 1st grade, instead of above that rank. This list, it will be observed, includes two officers appointed Assistant Engineer, 1st grade, long after the prescribed date.

2. Lord Kimberley, in replying to this portion of our Despatch, in paragraph 13 of His Lordship's Despatch No. 71 P.W., dated 13th November 1884, granted the concession asked for, subject to a restriction as to the age at which the previous experience was acquired, to any of the officers mentioned in the list referred to in the foregoing paragraph.

3. Our intention had been all along to admit to this privilege all men from whatever source appointed to the Department as 1st grade Assistant Engineer, provided they had received no bonus from a Guaranteed Railway Company. Subsequently we discovered that through an oversight our nominal roll referred to in the last paragraph had included the names of officers appointed in India only, so that those similarly situated and appointed from England were not included in the concession. We therefore referred the matter again to the Secretary of State in our Despatch No. 7 P.W., dated 24th February 1885.

4. Lord Kimberley assented to this extension of the concession in His Lordship's Despatch No. 14 P.W., dated 23rd April 1885, with the remark that the number of officers affected by the extension would apparently be about twelve. It thus appears that in both cases—namely, of the officers appointed in India and those appointed by the Secretary of State who were admitted to the privilege—reference has been made to a nominal roll. The first nominal roll of men appointed in India included men appointed after 1st November 1873; the second, one which Lord Kimberley probably had in his mind when Despatch No. 14, dated 23rd April 1885, was written, included no men appointed after this date, because no such appointments from England were made after the first batch of Cooper's Hill students was sent out.

5. In recently endeavouring to formulate a rule, either in addition to or supersession of section 118 (E) of the C. P. Code, a doubt has been raised whether Lord Kimberley intended or not to remove the old restriction which limited the privilege to men appointed before the 1st November 1873. The correct conclusion, from what has been said above, seems to be that no principle was definitely stated, but that men included in certain lists have been admitted

to the privilege, provided they received no bonus from a Guaranteed Railway Company.

6. We therefore append a corrected list of the men who were admitted to the Department after previous training as Assistant Engineer, 1st grade (Enclosure No. 1), and request Your Lordship's permission to formulate a rule as drafted in Enclosure No. 2. It will be observed that an officer, Mr. Gütersloh, whose name did not appear in former lists, has been included in the revised list. The cause of his name being omitted was that although originally on the Engineer Establishment, he had been transferred to the Superior Revenue Establishment of State Railways at the time our Despatch No. 15, dated 21st April 1884, was written.

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No. 70 (Public Works), dated 22nd December 1887.

From—The Secretary of State for India,

To—The Government of India.

I have received Your Excellency's Public Works letter No. 65, dated 31st October 1887, forwarding a revised roll adding one to the former list of the Civil Engineers who entered the Public Works Department, in the 1st grade of Assistant Engineers, and are eligible, under the sanctions conveyed in Lord Kimberley's Public Works Despatches No. 71, dated 13th November 1884, and No. 14, dated 23rd April 1885, for the concession of an addition of three years to their service for pension on account of experience acquired previous to joining the Department.

2. You also submit for my approval the draft of a rule, as noted in the margin, which it is intended to add to the Civil Pension Code.

" Civil Engineers who were appointed to the Department as Assistant Engineers, 1st grade, may be allowed on account of previous experience to add to their pensionable service a period not exceeding three years, provided such experience was not acquired before the age of 25. This concession will not, however, be granted to any officer taken over, directly or indirectly, from one of the Guaranteed Railway Companies, who received a bonus on leaving the service of the Company."

3. This would virtually supersede the existing rule, and have the effect of making permanent what was intended only as a temporary measure to meet the peculiar circumstances of the Department at the time. Such a rule would in effect recognize as a practice what, in the existing constitution of the Department, should be rarely, if ever, necessary. If in future the services of an Engineer of the standing of a 1st grade Assistant should, for any particular

reason, be required, his engagement should be temporary, and no question of pension should arise.

4. I consider, therefore, that the sanctions conveyed in Lord Kimberley's Despatches, already referred to, should be held to apply only to the specific cases of the Engineers in connection with which they were given, the amended list forwarded with your present letter being accepted as containing the names of all the men who joined the Department in the 1st grade of Assistant Engineers after previous training.

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**List of European Engineers appointed in India to be admitted to the improved pension rules.**

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No. 64 (Public Works), dated 31st October 1887.

From—The Government of India,

To—The Secretary of State for India.

We have the honour to acknowledge the receipt of Your Lordship's Despatch No. 53 (Public Works), dated 25th November 1886, on the subject of the

admission of certain European Engineers not appointed in England to the benefits of the more favourable pension rules sanctioned for European Civil Engineers.

2. Paragraph 2 of that Despatch relates to the completion of the list of officers who fall under the definition of "European Engineers appointed in India." In ordinary course, the list then considered to be finally approved would have been published and added to the Civil Pension Code, and the officers included in it would have been admitted to the new rules subject to a reservation, pending Your Lordship's decision, in regard to their being allowed to count service before the age of 22 years.

3. Before, however, we replied to the Despatch and published the list, it was brought to our notice that the list was incomplete by reason of the omission of at least one officer with European training; and this lead us to have the lists carefully revised, and the papers of all those included in it, as well as the papers of officers with European names excluded from it, carefully scrutinised. As we have already pointed out in our Despatch No. 38 (Public Works), dated 3rd September 1886, the original lists forwarded with our Despatch No. 15, dated 21st April 1884, were not intended to be complete; they were subsequently revised with much care, but unfortunately were not absolutely correct. This incorrectness was due to one officer\* being shown as an Indian College student who was not so; and to another officer,† who was first trained in England, having been subsequently

\* Mr. Cantopher.

† Mr. Garstin.

admitted to the Public Works Department after passing a test examination at the Thomason College. We have now added these two names to the list.

4. The questions, however, which came up in the course of our investigation, led us to appoint a Committee to examine the papers of all the officers included, as well as those excluded from the list, being European or Eurasian officers appointed in India not from the Indian Colleges; and the result was that it seemed doubtful whether some of those already included in the list should not have been excluded.

5. After full consideration we have come to the conclusion that only one officer, Mr. W. L. Buyers, previously included, should be excluded from the revised list; and that one officer, Mr. Toogood, in addition to the two mentioned in paragraph 3, should be added to it.

It should be added that Mr. W. L. Buyers, whom it is proposed to exclude, has not been told whether he has hitherto been included or not.

6. There are two other officers, Messrs. R. D. Bayley and P. B. Roberts, whose names were included in the former list, but whom we have excluded from the list now forwarded, because the information regarding them is still incomplete: one of them is in England, the other in Burma; and as the information which was written for some time ago has not yet been received, we are unwilling to delay the case further, and will address Your Lordship in continuation of this Despatch when the information is complete.

7. In coming to the decision referred to in paragraph 5, we think it necessary to inform Your Lordship that we have some doubt whether all the officers thus included in the revised list fulfil the definition of "Engineers with European training" as intended by Lord Kimberley in his Despatch No. 38 P.W., dated 13th November 1884. These doubtful cases have been classed by us as follows:—

Three officers.

I. Officers educated and thoroughly trained as Engineers in the Colonies.



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|-----------------|---|
| Seven officers. | II. Officers educated in England and partially trained there, subsequently completing their training in India.  |
| Three officers. | III. Officers educated and partially trained with a view to being Engineers in the Colonies, and who subsequently completed their training under European Engineers in India. |
| One officer.    | IV. Officers educated in England and partially trained in the Colonies, subsequently completing their training in India.  |

Appended to this Despatch is a schedule giving complete particulars in regard to these officers so as to enable Your Lordship to confirm or reject our decision on the matter.

8. We may add that the only officers in regard to whose admission we have considerable hesitation are the two noted in the margin.
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|----------------------|--|
| Mr. J. W. Buyers.    |  |
| ,, F. J. McLaughlin. |  |

The Committee who investigated the case held that Mr. J. W. Buyers, although he described himself as having "passed examinations at King's College, Aberdeen, in all the chief subjects comprised in the technical education of a Civil Engineer," in reality only passed through an ordinary university course and obtained an ordinary M.A. degree. It is therefore doubtful whether there are better grounds for including him than for including his brother, Mr. W. L. Buyers, who, after receiving a good education in England, came to India and received a thorough training on the Guaranteed Railways. It will be observed, however, from our 5th paragraph, that we have excluded the latter.

Mr. F. J. McLaughlin was pupil to an English firm of Engineers for a few months only, and then passed into the Public Works Department through the Roorkee College, so that there is little difference between him and a Thomason College student.

The difficulty in now excluding these officers lies in the fact that they had previously been informed by us on application, that their names would be included in the list of European Engineers. On the other hand, there are some officers who have been authoritatively excluded from the list who will feel themselves hardly used if these officers are admitted. Chief amongst these may be mentioned Mr. M. Birkbeck, whose case was decided in Your Lordship's Despatch No. 21 P.W., dated 5th May 1887, but who we observe was actually engaged by an engineering firm in England to work on a Guaranteed Railway in India, and was there trained under English Engineers. Similarly, we think that all officers who were educated in England and then trained on Guaranteed Railways or otherwise in India, as Mr. W. L. Buyers was (and there are several others in the same position), might possibly complain of the admission of officers trained wholly or partially in the Colonies, or only partially trained in England, being admitted. With these remarks we leave the final decision in regard to those who should be included in the list in Your Lordship's hands subject to the further communication regarding Messrs. Bayley and Roberts promised in paragraph 6.

9. In regard to the 3rd and 4th paragraphs of Your Lordship's Despatch under reply, and in compliance with paragraph 4 of Your Lordship's Despatch

No. 28, dated 25th November 1886, we have already informed those officers (not being students of the Indian Colleges), who on promotion to the Superintending Engineer class have been admitted to the new pension rules, that they can not count service before the age of 22 as pensionable. In regard to those with European training who are included in our revised list, we have in that list shown the age of each at appointment. It will be observed that as a rule these officers entered the Department after the age of 22, but that there are 12 named in the margin who will gain to a certain extent if they are allowed to count service before the age of 22. On the whole we would recommend that these officers should be allowed the benefit of the rule so as to place them on a par with Engineers appointed from England, some of whom do count service considerably before the age of 22.

10. As regards the corresponding case of officers of the Telegraph Department, we should explain that the only officer appointed by the Government of India in India after being trained or partially trained in England is Mr. Blissett, the decision in whose case has been acted upon. Officers trained and appointed in India, who may be admitted to the better pension rules on the ground of attaining the rank of Superintendent, 1st grade, will, pending the issue of a general rule, be informed that they cannot count service before the age of 22 for pension.

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No. 4 (Public Works), dated 2nd February 1888.

From—The Secretary of State for India,

To—The Government of India.

Your Excellency's Public Works letter No. 64, dated the 31st October 1887, respecting the admission of certain members of your Public Works Department to the benefits of the more favourable Pension Rules sanctioned for European Civil Engineers, has received my consideration in Council.

2. With this letter you transmit a revised list of the European Engineer of your Public Works Department whom you desire to admit to the more favourable pension scale, but as in certain cases it is doubtful whether the conditions of the officers' services comply with the definition of "Engineers with European training" as intended by Lord Kimberley's Public Works Despatch No. 71, dated 13th November 1884, you request instructions on the subject.

3. The doubtful cases, 14 in number, which you submit for my consideration, show that in all instances the officers concerned have received a practical training in civil engineering, though not in all cases actually in Europe, and that they have proved themselves useful and satisfactory members of the Department is evidenced by the fact of the Committee appointed by your Government having specially selected them as fit for special treatment.

4. In these circumstances, I have no desire to adhere to a rigid enforcement of the definition "Engineers with European training," the intention of which expression was to ensure a sound professional training, and I am willing to sanction the revised list of European Engineers, as transmitted with your letter under reply, for admission to the more favourable pension rules, it being understood that this revised list is a final one, with the exception of two officers, Messrs. R. D. Bayley and P. B. Roberts, regarding whose claims for inclusion in the list you state you will address me later.

No. 17 (Public Works), dated 20th March 1888.

From—The Government of India,

To—The Secretary of State for India.

In acknowledging receipt of Your Lordship's Public Works Despatch No. 4, dated the 2nd February 1888, sanctioning the revised list of European Engineers transmitted with our Public Works Despatch No. 64, dated the 31st October 1887, for admission to the more favourable pension rules, we have the honour to invite attention to paragraph 4 of Your Lordship's Public Works Despatch No. 53, dated the 25th December 1886, and paragraph 9 of our Despatch referred to above, and to enquire whether Engineers with European training appointed to our Public Works Department in India may be permitted to count service before the age of 22 years towards pension.

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No. 17 (Public Works), dated 3rd May 1888.

From—The Secretary of State for India,

To—The Government of India.

In reply to Your Excellency's letter No. 17 (Public Works), dated 20th March 1888, inquiring whether it was my intention, by the decision conveyed by my Public Works Despatch No. 4, dated 2nd February 1888, to permit the Engineers of your Public Works Department therein referred to, to count service for pension before the age of 22, I have to inform you that such was my intention.

2. My desire was to place those officers who, though not trained in Europe, had in your opinion received a sound professional training elsewhere, on an equal footing with officers appointed from England, and this decision extended the permission to count service before the age of 22 to the 12 officers recommended for that privilege in the 9th paragraph of your Public Works letter No. 64, dated 31st October 1887.

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**Service as Superintending and Chief Engineers entitling to extra pensions.**

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No. 16 (Public Works), dated 20th March 1888.

From—The Government of India,

To—The Secretary of State for India.

In his Despatch No. 18, dated 22nd March 1883, when sanctioning an improved scale of pensions for European Civil Engineers of the Public Works Department, Lord Kimberley authorised the grant of extra pensions of Rs2,000 and Rs1,000 respectively to officers who may have served three years as Chief and Superintending Engineers, or who may have been graded as such.

2. There is nothing in the words used by His Lordship to show precisely whether officiating service in these grades was intended to be included or excluded in counting the period of three years, although it seems to be implied that the extra pensions were to be given for the service rendered, *viz.*, for the performance of the more responsible duties whether with permanent or temporary rank. The ordinary rule under our Civil Pension Code is to calculate pension wholly on the salary of the substantive rank, taking no account of the additional salary which an officer draws as officiating in a higher rank; and

the principle that two officers cannot at the same time be counting service for pension in the same appointment.

3. At the present time, owing to the abnormal condition of the Engineer Establishment, and the small number of superannuations, a good number of officers have a considerable amount of temporary service as Superintending Engineers but little or no substantive service; and it might happen (and in one case it does happen) that an officer has above three years' service as temporary Superintending Engineer, while he has no substantive service in this class.

4. After fully considering the question, it is thought that under the circumstances the most equitable rule to adopt will be to allow active service only to count towards the extra pension, excluding altogether periods passed on furlough, even when the officer has become substantive. This proposal is in accordance with the fundamental principle of the Code referred to in paragraph 2 that two officers cannot be counting service for pension at one time in the same appointment. The enclosed Schedule A shows the effect of the rule upon all the Civil Engineers now in the Department who have any service, temporary or substantive, as Chief or Superintending Engineers: the second column of this schedule shews the total active service, substantive or temporary, passed as Chief and Superintending Engineer respectively, and the third shews the total substantive service including periods on leave. Under present rules, the service for extra pension would be counted as in column 3; under the proposed rule it would be counted as in column 2.

5. A second schedule gives the same information for officers who have already retired with the extra pensions, and shows that they would have earned the same pension under the proposed rule. We therefore would wish to consider the proposed rule as applicable to the new scale of pensions, in all cases, as if it had been so laid down at the time of the original sanction.

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No. 21 (Public Works), dated 17th May 1888.

From—The Secretary of State for India,

To—The Government of India.

Your Excellency's Public Works letter No. 16, dated 20th March 1888, suggests that the ruling which authorises the grant of extra pensions of Rs2,000 and Rs1,000 per annum respectively to officers who have served three years as Chief and Superintending Engineers in your Public Works Department, should be held to apply to any active service in those grades, whether substantive or officiating, provided that any periods passed on furlough be excluded from calculation.

2. Such an interpretation of the ruling is in accordance with its intention to provide extra pensions for duties of a special and responsible character; and it is also, as you observe, consistent with the principle of the Civil Pension Code, which precludes two officers counting service for pension at one time in the same appointment.

3. I am willing, therefore, to sanction your proposals in this matter, but at the same time I would point out that my predecessor's original sanction of these extra pensions by no means conferred them as a right to be claimed by officers, but only to be "granted at your discretion, as rewards of approved services."\*

4. I deem it important that this qualification should not be lost sight of by your Government.

\* See paragraph 14 of Lord Kimberley's Public Works Despatch No. 18, dated 22nd March 1883.

No. 4047, dated 24th July 1888.

Resolution by the Government of India, Department of Finance and Commerce.

**READ—**

Paragraph 2 of Resolution by the Government of India in this Department, No. 449, dated 18th April 1884.

Despatch to Her Majesty's Secretary of State for India, No. 16 P.W., dated 20th March 1888.

Despatch from Her Majesty's Secretary of State for India, No. 21 P.W., dated 17th May 1888.

By the Resolution in this Department of the 18th April 1884, special additional pensions of ₹2,000 and ₹1,000 respectively were authorised as rewards for approved service for Civil Engineers who might render three years' service as Chief Engineer or as Superintending Engineer. It was not, however, decided whether the service qualifying for these special pensions must be substantive service, or whether periods of temporary service might be included. On this question being raised, the opinions of selected officers were obtained and submitted to the Government of India, and after consideration of them, and in accordance with the principle laid down in the Civil Pension Code that two officers cannot count service for pension at one time in the same appointment, the Secretary of State was requested to allow active service, both substantive and temporary, to count as service qualifying for these special pensions, periods of furlough being excluded.

**RESOLUTION.**—This proposal has been sanctioned by Her Majesty's Secretary of State for India. In future, therefore, all service, whether temporary or substantive, will count as service towards the extra pensions, but periods passed on leave, other than privilege leave, will be excluded.

Periods of three months and under, during which an officer merely officiates as a purely temporary measure, will not count.

2. It is important, however, to bear in mind that these extra pensions cannot be claimed as a matter of right, but that they will only be granted, at the discretion of the Government of India, as rewards of approved services.

**ORDER.**—Ordered, that a copy of this Resolution be forwarded to the Public Works Department for information and guidance, and that the Resolution be published in the Supplement to the *Gazette of India*.

**Limitation of tenure of high appointments to 5 years.**

No. 2023 G., dated 12th October 1887.

Resolution by the Government of India, Public Works Department.

**Read again—**

Rules III and IV, Public Works Department Notification No. 293, dated 3rd September 1883.

**Read also—**

Despatch to Secretary of State, No. 1 (Public Works), dated 4th January 1887.

Despatch from Secretary of State, No. 11 (Public Works), dated 24th February 1887.

**OBSERVATIONS.**—The portion of the Notification of 1880 read again in the preamble limited the tenure of appointment by officers of the Corps of

Royal Engineers holding the rank of Chief Engineer to five years. The Government of India having recently had this matter under consideration, it appeared to His Excellency the Governor General in Council that the reasons which led to the framing of the two rules quoted were equally applicable to all classes of officers employed in the Department, and the sanction of the Secretary of State has been obtained to revise them accordingly.

**RESOLUTION.**—The Governor General in Council is now pleased to order the substitution of the following Rule for Rules III and IV of the above notification quoted in the preamble:—

III. No Chief Engineer of the Engineer Branch of the Public Works Department, nor any officer of corresponding rank in the Superior Revenue Establishment of State Railways, or in the Superior Accounts Establishment of the Public Works Department, nor any officer holding the office of Secretary or Deputy Secretary to the Government of India in the Public Works Department, shall, without reappointment, hold the same post for more than five years.

*Note.*—This rule already applies to Royal Engineers of the Engineer Branch of the Public Works Department, and to Royal Engineers holding the appointments specified in the Public Works Secretariat of the Government of India under Public Works Department Notification No. 293, dated 3rd September 1880; it will apply to all other officers of the classes enumerated with effect from this date, from which the period of five years will begin to run.

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### Vacation of Civil Appointments by Military Officers on attaining certain rank.

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No. 154 (Military), dated 4th October 1886.

From—The Government of India,

To—The Secretary of State for India.

In Lord Kimberley's Military Despatch No. 31, dated 5th February 1885, His Lordship decided that an officer of Royal Engineers holding the appointment of Chief Engineer in our Public Works Department, or a post carrying that rank in the Department, should vacate his appointment on promotion to the rank of Lieutenant-General, being allowed, however, as in the case of a General Officer Commanding a Division, to retain his appointment to the 31st March following his promotion, provided he would not, under any other regulation, vacate it in the interval.

2. Officers of Royal Engineers holding the undermentioned posts in our Public Works Department Secretariat are not Chief Engineers, nor do they rank as such, and the above rule is therefore inapplicable to them:—

Secretary.

Inspector General of Irrigation and Deputy Secretary, Civil Works Branch.

Director General of Railways, and Deputy Secretary, Railway Branch.

3. We are of opinion that the reasons assigned for introducing the rule apply equally to officers of Royal Engineers holding these posts, and we request Your Lordship's sanction to make the rule applicable to them.

No. 8 (Military), dated 6th January 1887.

From—The Secretary of State for India,

To—The Government of India.

I have considered in Council Your Excellency's Military Despatch No. 154, dated 4th October 1886, proposing the application to certain posts in the Public Works Secretariat of the rule requiring an officer of Royal Engineers holding the appointment of Chief Engineer in the Public Works Department, or a post carrying that rank in the Department, to vacate his appointment on promotion to the rank of Lieutenant-General.

2. In reply, I have to inform Your Excellency that the rule was originally laid down under the supposition that it would be sufficient to cover every case of the tenure by an officer of Royal Engineers of a post in the Secretariat and departmental branches of all the Public Works Departments in India.

3. As it is, however, possible that a similar case may arise hereafter with regard to an appointment held by an officer not of the Royal Engineers, and with the object of removing once for all any uncertainty on these points, I have decided that the rule shall be amended as follows:—

“An officer of the rank of Lieutenant-General is not eligible to hold an appointment of any kind in the Secretariat or departmental branches of any of the Public Works Departments in India; and an officer holding any such appointment shall vacate his appointment on promotion to the rank of Lieutenant-General, being allowed, however, to retain his appointment to the 31st March following his promotion, provided he shall not, under any other regulation, vacate it in the interval.”

4. The foregoing rule will cover the particular cases specified in your despatch under reply.

**Rule empowering Government to compel Officers who had not attained the rank of Superintending Engineer to retire at the age of 50 years.**

No. 1884 G., dated 26th September 1887.

Resolution by the Government of India, Public Works Department.

Read again—

Despatch from Secretary of State, No. 18 P. W. of 22nd March 1883.

Despatch to Secretary of State, No. 15 P. W. of 21st April 1884.

**RESOLUTION.**—The Governor General in Council is pleased to rule, with reference to the correspondence quoted above, that any Civil Engineer of the Public Works Department, who on reaching the age of 50 years has not attained the rank of Superintending Engineer, will be liable to be called upon to retire: provided—

I—That no officer having less than 25 years' service to his credit for pension shall be called upon to retire under this order within two years of the present date.

II—That no officer having less than 20 years' service to his credit for pension shall be called upon to retire under this order within three years of the present date.

III—That an officer called upon to retire under this order shall be allowed to take any furlough admissible under the rules before his final retirement, subject to the condition of Section 110, Rule 9A, Civil

Pension Code, in regard to retirement on attaining the age of 55 years. This proviso to be in force for five years from the date of this Resolution.

2. A Military officer in the Public Works or Military Works Department, who on reaching the age of 50 years has not attained the rank of Superintending Engineer, will be liable to be called upon to vacate his appointment, provided that, before finally quitting the Department under this order, he be allowed to take any furlough admissible under the rules and allowances of the Public Works Department applicable to him. This last proviso to be in force for five years from date of this Resolution.

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No. 20 (Public Works), dated 17th May 1888.

From—The Secretary of State for India,  
To—The Government of India.

I addressed Your Excellency by my Public Works Despatch No. 3, dated 26th January last, regarding the operation of a Resolution of your Government in the Public Works Department, No. 1884 G., dated 26th September 1887, which rendered Military officers serving in that Department liable to compulsory retirement from their appointments if they had not attained the rank of Superintending Engineer before they reached the age of 50.

2. I informed Your Excellency that the subject of this Resolution would be referred for the consideration of the Secretary of State for War, in connection with the terms of the Royal Warrant of 20th February 1886, which regulates the employment of Royal Engineers in India, and dated 24th January 1888. I now forward copies of the correspondence\* that has taken place.

\* Letter to War Office,  
dated 24th January 1888.  
Letter from War Office,  
dated 10th February 1888.

3. Mr. Secretary Stanhope sums up his conclusions on the subject as follows :—

“(1) Subject to military and civil efficiency, military officers who have been accepted for continuous service in India have a prescriptive right to continuous employment, civil or military, up to the time at which they leave the Army under the warrant under which they are serving.

“(2) Taking into consideration the different circumstances under which civil and military officers join the Public Works Department and the different conditions under which they serve in that Department, there appears to be no sound reason for applying the same rule of retirement to both classes.

“As, however, by the terms of the Resolution of the Government of India these officers are only ‘liable’ to be removed, Mr. Stanhope sees no objection to the proposed rule, provided that each case be dealt with on its merits, with due consideration to any special cause which may have delayed the advancement of an officer in the Public Works Department.”

4. I concur in the first of the conclusions of the Secretary of State for War, but as regards the second, Mr. Secretary Stanhope was not aware of the decision recently passed which places the Royal Engineers and the Civil Engineers of the Department on an equal footing in respect to their first entry into the Public Works Department, by allowing Royal Engineers to count their departmental service as commencing  $2\frac{1}{2}$  years after the date of their first commission, provided they do not add more than one year to their actual service in the Department.

5. The correspondence which has passed between my predecessors and your Government on this subject may have left the question of the compulsory retirement of Royal Engineer officers at the age of 50 in the manner proposed some-



what ambiguous, but, after a careful consideration in Council of the position of the Royal Engineers, it appears to me that the arrangement is one which on general grounds is undesirable, and could not be applied without involving very inconvenient results. By far the largest part of the Royal Engineer establishment is maintained as a reserve force, and is intentionally and necessarily employed in the Public Works Department when not required for military duties. As, in time of peace, the purely military posts to be filled are very few, there would obviously be no means of utilising Engineer officers if they were removed from the Public Works Department, although the obligation on the Government to retain them for military service would continue until they became subject to retirement under the terms of the Royal Warrant that regulated their service in the Army. In this respect their position is altogether different from that of the Civil Engineers, whose services being confined to the Public Works Department, are necessarily brought to a close when they retire from departmental duty.

6. Without entering on any discussion as to the power of the Government to dispense at any time with the services of an officer on grounds of personal misconduct or incapacity, it is clear that the terms of service of Royal Engineers are defined by the Royal Warrants that relate to them, and that officers who have volunteered for continuous service in India will remain at the charge of the Indian Government until their service is terminated in accordance with those Warrants, which virtually guarantee their employment until the age of 55. Their removal from the Public Works Department will have no effect on their military *status*, and would manifestly lead to additional useless expenditure, as every officer so removed must be replaced by some one brought in from without, and would himself be left without employment.

7. The intention of Clause 8 of the Royal Warrant of 20th February 1886 was to secure to officers of Royal Engineers who have declared for continuous service in India the right to retain their appointments in the Civil Departments in which they may be employed, until the age of 55, notwithstanding the operation of the Warrants affecting their military *status*; and it cannot fail to have the effect of discouraging officers from accepting continuous service if they find they are liable to lose the advantage of this pledge by an alteration in the rules of the Public Works Department, subsequently adopted, which exposes them to an additional risk of compulsory retirement from employment, which was not contemplated when the Royal Warrant of February 1886 was published. Those officers, moreover, who had elected for continuous employment before your Resolution of September last was published, may have serious ground of complaint if that order is made applicable to them.

8. On the whole, therefore, I think it advisable to request that you will reconsider the subject with reference to the foregoing remarks; and as it would be both inconvenient and inconsistent with former declarations if any avoidable distinction should be allowed to exist between the conditions of service of the Civil and Military officers of the Department, it will also be necessary to consider whether, if it is not practicable to apply the rule to the latter, it should not also be withdrawn in the case of the former.

9. In connection with this subject, I further desire to call Your Excellency's attention to the fact that at present, Royal Engineer officers fall under the operation of rules which injuriously affect their personal interests, and that in a manner which is especially hard on them, to which Civil Engineers are not subject. I refer to the regulations which require the vacation of their appointments under certain conditions by officers promoted to the rank of General. It

has been brought to my notice that in some cases these rules may have the effect of preventing officers who have performed distinguished military service, and have consequently attained high military rank, from succeeding, as they might otherwise have fairly expected to do, to the highest posts in the Public Works Department. On a reconsideration of this subject, I am disposed to doubt the expediency of retaining this disqualification, excepting as regards Lieutenant-Generals, who, by common usage, are only retained in high posts for which they are specially selected; and I think it desirable that the present rules should be reconsidered from this point of view. In the rare cases in which the military rank of a Public Works officer might cause practical inconvenience, some arrangement could usually be made for his transfer to another appointment.

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**Attempt to develop and complete the organisation of the Department as recommended by the Government of India in 1884, but only partially accepted by the Secretary of State.**

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No. 10 (Public Works), dated 2nd February 1886.

From—The Government of India,

To—The Secretary of State for India.

On receipt of Lord Kimberley's Despatch No. 71 P.W., dated 13th November 1884, the measures sanctioned in it for the reorganisation of the Engineering Branch of the Public Works Department, with a view to improving the position and prospects of the officers, were put in force, and for the present they have secured the desired result; but while we have no desire to reopen the question at present, we think it right that Your Lordship should be in possession of our views as to the efficiency of the scheme as a permanent measure.

2. We enclose, for Your Lordship's information, copies of statements (marked A and B) in which a comparison is made between the scheme proposed by us and that sanctioned by Her Majesty's Government, (1) as to the prospects of promotion relatively afforded by each, and (2) as to the probable cost of each to the State. The first table (A) shows that, so far as relieving the stagnation of promotion in the Executive and Assistant ranks is concerned, the sanctioned scheme will completely fail. And the second table (B) shows that this failure to procure such a fair rate of promotion as is necessary for efficiency in the performance of departmental duties will, in the long run, produce a saving of less than one-half per cent. on the total cost as represented by the salaries of the officers.

3. The immediate effect of the sanctioned scheme has been to give a good deal more promotion at the outset than was contemplated in the scheme recommended by us. During the first three years it is more costly to the extent of about Rs2,30,000 per annum on an average, and just as it begins to become less costly, the retardation of promotion, which it was the object of the reorganisation to remedy, will begin to be intensified, till in the course of the succeeding four or five years, no officer will have a reasonable expectation of promotion to the 1st grade of Executive Engineer much before he is 50 years of age.

4. The senior Executive Engineers are, however, content at present having received early promotion; the juniors and assistants are also for the time being satisfied by the steps they recently received and the increments to their pay; and, as stated above, we think that for the present no further action is necessary, but we are confident that before many years have elapsed, it will be found necessary, in the interests of the public service, to adopt the scheme, or some adaptation of it, which we recommended in 1884.

**Measures in connection with organisation of the establishment consequent on the report of the Finance Committee.**

No. 78 (Public Works), dated 20th December 1887.

From—The Government of India,

To—The Secretary of State for India.

We beg to forward, for Your Lordship's information, copy of a Minute recorded by our honourable colleague Sir Theodore Hope, in anticipation of his resignation of office, on the subject of the remarks on the Public Works Establishment, which are contained in Volume II, Chapter XI, Section 13 of the Report of the Finance Committee, 1886, transmitted to Your Lordship with our Despatch in the Financial Department, No. 153, dated 18th June last.

2. We propose hereafter to address Your Lordship communicating our views upon the whole question of Public Works Establishments.

*Minute by the HON. SIR THEODORE C. HOPE, K.C.S.I., C.I.E., dated 21st December 1887.*

In paragraph 3 of the Resolution of the Government of India in the Financial Department, No. 649, dated 10th February 1886, constituting the Finance Committee, the following passage occurs:—

"It is not desired that the Committee should propose any material modifications in arrangements which have in recent years been carried out after mature deliberation under the sanction of the Secretary of State; but they will be expected to pursue a similar line of enquiry so far as regards departments or branches with which the changes effected in late years have not definitely dealt, or in which the reforms hitherto effected may prove to have failed to secure the economy aimed at."

This passage was framed, after full consideration in the Council, with the object of excluding from the Committee's enquiry questions of organic structure of the Civil Administration which had been recently dealt with, and, in particular, of the Engineer Establishment of the Public Works Department, which had been settled by the Secretary of State only fifteen months previously, after an elaborate correspondence extending over several years.

2. In the course of the summer of 1886 the Committee asked for and obtained some limited statistical information, but I had no cognisance of what line they were adopting in respect of the Department until the end of November, when I received from the Finance Department for consideration a preliminary note by one of their Sub-Committees. This note I found to be materially beyond the scope of the Committee's enquiry, as contemplated by the Resolution above referred to. So much of it as related to the number of officers required to perform the functions of the Department, the number of men to be recruited annually in order to maintain that strength, the disposal of officers (if any) found to be in excess of the necessary strength, the proportion of sanctioned salaries to be received by native Engineers, and rules or practices not touching organic structure, seemed perfectly legitimate. The note went much further, however. It discussed the whole organisation prescribed by the Secretary of State, the proportions of the different grades, the classes and institutions whence recruits should in future be derived, and the structure of the Department in various particulars. Moreover, it had evidently been produced after enquiry of a very partial nature, not such as could afford to the Sub-Committee a full knowledge of facts, duly obtained and verified. Finally, it opened with a detailed summary of past correspondence, not indeed incorrect so far as it

goes, but incomplete in that it does not go far enough into the facts and difficulties of the several points which present themselves to a person desirous of a true and complete history of the case: and does not explain the reasons on account of which the various measures were advocated or adopted.

3. The objections to dealing with a Note of this description I at once brought to the notice of the Financial Department, but owing to misunderstandings and accidents which I need not particularise, the matter was not effectively dealt with, the Committee was dissolved at the end of December without fully going into it, and the Note, with a few corrections of the admittedly legitimate portions made by the Finance Commissioner (Sir Charles Elliott), after conference with me, appeared as Section B, Chapter XI, Vol. II of the Committee's report.

On consideration of the question by the Government of India in March 1887, it was decided that the points I had raised should be taken up by the Financial Department on formal receipt of the report. That Department has not yet done this, however, and as I am about to vacate my present office, and a considerable portion of the Finance Committee's chapter is virtually an impeachment either of the organic measures adopted with reference to the establishment during my incumbency, or of the manner in which those measures and the general system in such matters have been administered, I am obliged to leave on record a full explanation of my views on the subject.

4. The Finance Committee's Section B may be divided, under the aspect already explained, into two pretty broadly discernible portions,—that which appears to be legitimately within the scope of their enquiry, and that which does not. As the history and questions involved in each are complicated and technical, precluding satisfactory treatment except at considerable length, I append two memoranda prepared in the Public Works Department (A and B), in which they are pretty fully dealt with, and shall confine this Minute to a more broad and general exposition, with references to those appendices for details.

5. The causes of the difficulties which have been long felt, and which it has been the object of correspondence with the Secretary of State for some ten years past to remove, may be described as four-fold—

*1st.*—The great expansion of the Department which took place from 1860, and notably from 1868 up to 1875 or thereabouts. This produced, for a time, a heterogeneous mass of men of various ages in the same year of service, engaged under various conditions, followed by very large annual batches of men of about the same age. The consequences were promotion, for a time far more rapid and ill-apportioned than any normal scale, calculated to afford an even and just flow, would justify, and incompatible with a due balance between superior and executive posts, followed necessarily by stagnation and its well-known concomitant evils. (A—paragraphs 5 and 30.)

*2nd.*—Hasty and irregular recruitment during the period of expansion, and even somewhat later, accompanied by expectations authoritatively held out to recruits of a rate of promotion equal to that which prevailed during the period of expansion.

*3rd.*—Recruitment based on data or assumptions which are now known to be totally unfounded and incorrect. (A—paragraphs 14 to 16.)

*4th.*—A remarkable ignorance, on the part of both the Government of India and the Home Government, of the inevitable results of

these causes,—an ignorance which prolonged the mischief long after its existence might have been apparent, and encouraged expectations reasonable in themselves, but actuarially impossible.

This ignorance, I may remark, was not at that time confined in its effects to the Public Works Department. The Civil Service of the several Provinces of India was brought by similar action, during the same period, and earlier, into a condition of retarded promotion and disorganisation even more lamentable than that of the Public Works Department. It was not until the Committee of 1876, on the former of which Sir William Muir was President, and Mr. Westland Secretary, and the Government of India's despatch No. 97 P. W. of 2nd November 1880 about the latter, followed by the Secretary of State's reply, No. 50 of 8th September, forwarding General Hannington's Tables, that the technical aspect of the question gradually obtained attention. In thus speaking of ignorance, I do not mean to reflect upon any one, but merely to indicate that the need for an actuarial basis in such matters appears to have been unsuspected and overlooked. Even now there prevails a tendency to suppose that the institution of a normal or typical scale of grades, classes, and salaries can remedy the existing evils of any body of officers who have originally been irregularly recruited. (A—paragraphs 9 and 10.)

Effects of causes above  
stated.

6. The more marked effects of these causes may be very briefly described to be the following:—

*1st*—A block in promotion was established, which is most injurious in two ways—(a) the reasonable expectations of qualified men are unfilled in a very marked degree; and (b) the prolonged periods of service in positions of inferior responsibility actually renders the men less competent for the exercise of higher authority.

*2nd*—This block led to various corrective efforts by modification of existing scales and rates, in order to increase emoluments which were not founded on the real position or responsibilities of the men who benefited by them, or a consideration of the executive needs of the Department, and did not effectively reach, for the most part, the individuals chiefly in need of relief. (B—paragraphs 6 to 12).

*3rd*—The same system was involved in and rendered necessary by the Secretary of State's revisional orders of 1884. (A—paragraph 18; B—paragraph 9.)

*4th*—The action referred to under the second and third heads has produced an establishment which is arranged less with reference to the work to be done than to the condition of affairs created by the errors and inadvertences of the past: an establishment to a certain extent too numerous, but still more open to serious exception on account of its uneven distribution, congested in the upper grades, while (under the present system of working) short-handed in the lower.

Committee's criticisms on  
organic structure of Dep't-  
ment.

7. Having proceeded thus far, I will notice briefly the Committee's principal criticisms, taking those first which relate to the organic structure of the Department.

8. "That the reorganisation of the Department has been due to a reprehensible agitation on the part of the European Civil Engineers" (Committee's paragraph 60). This charge appears to me to be inaccurate and undeserved. The reorganisation has been effected in order to remedy a condition admittedly due to past errors on the part of the Government, and to satisfy claims which were reasonable with reference both to the ability and standing of the individuals

and the expectations which had been held out to them. Moreover, it did not go so far as to establish the rate of promotion which had been deemed by the Secretary of State in 1881 to be essential to a well-organised staff of highly qualified officers, properly paid, with fair hopes of advancement. (A—paragraphs 24, 26, 29, and 30; B—paragraph 22.) It is true that the improvement in the Assistant grades went somewhat beyond what was necessary, but this was ordered by the Secretary of State, not recommended by the Government of India.

9. "That the remedies ought to have been temporary, only applicable to the men actually suffering from deferred promotion." The Committee were perhaps hardly aware what would have been the effect of carrying out this suggestion (A—30).

10. "That the number of Executives is in excess of the Executive charges, and that the old ratio of three Executives to four Assistants should be reverted to." A full exposition of this very complicated matter is given in paragraphs 5 to 18 of Appendix A. It has two aspects—an actuarial and an executive. Actuarially, such a ratio as that suggested would soon produce an unprecedented stagnation of promotion. Administratively, the difficulty is more apparent than real. Among the Executives there are a considerable number who are performing the duties of Assistants. Among the Assistants there are many whose charges are of considerable importance, and might either be made *quasi* independent or held by officers of no inconsiderable standing. In other words, if the 4th grade Executive Engineers were designated Assistants, the excess of Executives over charges would, to a great extent, disappear. Some of the newly-termed Assistants would no doubt be men of standing, long awaiting promotion, but such hardship as this involves will be found in all services as the tide of promotion ebbs and flows from time to time. Again, I do not consider that it is possible in this Department to determine a normal number of Executive charges, because the work is constantly varying, especially in the Railway Branch, and Executives and Assistants have to be employed accordingly. This change was recommended to the Secretary of State in our despatch of April 21st, 1884, but negatived along with other measures with which it was connected (A—paragraph 38).

11. "That the result of the reorganisation has been a great increase in cost and numbers." As to numbers, there must be some misapprehension, for the scheme provided no numerical increase. Perhaps the fact that under the restoration of regular recruitment the strength must culminate before it would fall to the contemplated number was overlooked. As to cost, it is sufficient to refer to the Government of India Despatch No. 10 P. W. of 2nd February 1886, which shows that the immediate increase was mainly due to measures prescribed by the Secretary of State.

12. "That Cooper's Hill College be abolished, and the Department supplied in future from (1) Royal Engineers, (2) Statutory Natives from the Indian Colleges, (3) Temporary Engineers, no fixed standard of recruitment being maintained, and appointments being regulated by the requirements as they could be estimated from year to year." These measures if adopted would, in my opinion, bring back the Department to that pristine state of inefficiency, not to say demoralisation, in which it was many years ago before its organisation was taken up. As the Royal Engineers are limited in number, and it has been ruled that they are primarily designed for military service, and only in civil employ by way of training for it, the bulk of the Department would come to consist of Statutory Natives or "Temporary" Engineers, neither of whom can

be deemed wholly satisfactory. The regular supply of Civil Engineers from England, and a proportion of about two-thirds Europeans to one-third Statutory Natives, are, in my opinion, essential to the maintenance of a high standard of morality as well as professional attainments.

13. The principal point brought forward by the Committee, with reference to the application of the sanctioned reorganisation of 1884, is that the distribution of grades was not literally carried out. This matter is dealt with in paragraphs 3 to 12 of Appendix B, where it is shown that compensation for loss of temporary promotion was not made in 1884, but had existed since 1880, and that its continuance was unavoidable.

Committee's criticisms on application of the reorganisation.

14. Another conclusion of the Committee was that there is, or shortly will be, an excess in the Department of from 150 to 200 men. In paragraphs 13 to 15 of Appendix B this conclusion is investigated, with the result that the excess is found to be from 50 to 75 men, at most, and that even this excess at the present time is due to causes—such as completion of projects in hand, transfer of Railways to Companies, and contraction of Provincial Grants—which are not necessarily of a permanent character. Any change of operations, such as the sanction of one or two State Railways, or even large surveys such as those which have been proposed in Upper Burma and between that Province and India, together with the annual reduction normally proceeding, would go far to absorb it.

15. As a remedy for the excess they believed to exist, the Committee suggested the stoppage of recruitment from Cooper's Hill and the restriction of the supply from the Indian Colleges. This question is noticed in paragraphs 13 to 19 of Appendix B. So far from the establishment—the present sanctioned strength of which is 888—not being “likely to be got down to even 1,000 within the next 18 years,” if the present rate of recruiting continues, as supposed in the Committee's paragraph 50, the present number, including all recruits of this year, is only 999, and should be 962 in 1891 and 878 in 1896, which is below the present estimated requirement of 925.

But even these figures do not do justice to the situation, because they include 72 men who are in “foreign service” under Railway Companies, Native States, &c. These men are no charge on the State, and pay for their pension and leave allowances, so they may be treated as non-existent. Consequently, the establishment which is chargeable to the State is even now only about 39 men in excess of 888, which the Secretary of State has fixed as the normal number.

Again, the present recruitment of 30 is only sufficient, according to the most recent tables with the present Rules, to maintain a body of rather under 700, so that there is a reduction even now of above 25 per cent. Below this it would be impossible to go without preparing for the future a recurrence of all the evils which irregular recruitment has produced in the past.

16. Upon a general consideration of what has been brought forward, it will I hope be apparent that the condition of the establishment is not altogether such as the Committee supposed. There is, indeed, overcrowding and retarded promotion in some grades; expensive privileges have been acquired by certain classes who do not require them and were not recommended for them by the Government of India; and there is a present surplus of some 50 men. To this position the Department are fully alive, and various measures are already in progress or contemplation in order to improve it:

(a) Temporary Engineers have been discharged, except two or three retained on special grounds.

- (b) Eight officers have taken furlough on special terms, and applications of 21 others are under consideration.
- (c) The tenure of certain high appointments has been limited to five years.
- (d) The rule requiring retirement of Royal Engineers, who are not Chief Engineers, 1st Class, to vacate their appointment on promotion to Major-General has been reaffirmed and enforced in several cases. A new rule has also been made requiring the vacating of any office on promotion to Lieutenant-General.
- (e) The rule rendering any officer who has reached 50 years of age without becoming a Superintending Engineer liable to be called on to retire has been promulgated.
- (f) Recruitment is proceeding on the basis of an establishment of under 700 Engineers, whereas the sanctioned number is 888 and the actual number 999.
- (g) Owing to this short recruitment, combined with all other collateral causes, the actual strength is running down more rapidly than the normal rate of depletion, and will by 1891 be little more than the sanctioned number.

17. Under these circumstances, there does not seem to me to be any need for drastic measures of doubtful efficacy and operation. The various rules tending to reduction must be enforced, and the employment of our Engineers by Companies, Local Boards, and Native States should be encouraged. The responsibility of senior Assistants and of Engineers who are doing Assistants' work should likewise be increased, by making new Divisions or *quasi*-independent charges, as much as is possible without great extra expense.

Moreover, I should be disposed to urge on the Secretary of State the expediency of now assenting to our proposal of 1884, that 4th grade Executive Engineers should be designated 1st grade Assistants, and also of withholding from men entering the Department hereafter the increase of Assistants' pay unnecessarily granted in 1884.

Finally, and in the event of further reduction being found absolutely indispensable, a certain number of men of proved inefficiency might be required to retire with the pensions of their rank, on the ground of reduction of establishment. But this measure would have to be applied with extreme caution, so as not to arouse ill-feeling between the several classes in the Department.

18. Beyond this, it does not seem to me to be necessary or advisable to go, unless indeed the Secretary of State were disposed, which seems improbable, to reconsider the whole general tenor of his orders of 1884, and to adopt the suggestions of the Government of India more completely than he did, so as to reach those on the present heterogeneous body who are most in need of relief. If such a reconsideration were entered upon, it would become a further question whether it would not be possible to introduce to some extent the principle now recognised in the case of the Civil Service, that the superior officers are to be a *corps d'élite*, and the juniors sufficient in numbers (and no more) to enable them to be trained for the higher posts. This would involve arrangements for doing the work otherwise, such as by employing selected Upper Subordinates for the purpose, and thereby rearing a class analogous to the Deputy Collectors who exercise much the same powers and functions as the Junior Civil Servants. This would be less distinctive and sooner feasible than the scheme for an intermediate Service, which was rejected by the Secretary of State in 1880. If, however, it were coupled with a continuance of the present system of recruiting nearly one-third of the superior service from



the Statutory class, it would tend to reduce the European element in the whole Public Works Administration to a point scarcely compatible with efficiency.

19. On the whole, I would advise not doing more than is indicated above in paragraph 17, and waiting patiently for the natural operation of the various regulations which have been made and the automatic improvement thereby of the condition of the Department.

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No. 65 (Financial), dated 29th February 1888.

From—The Secretary of State for India,

To—The Government of India.

I have considered in Council your letter, dated the 13th of December 1887, No 72 (Public Works), explaining the circumstances in which both a Consulting Engineer and a Deputy Consulting Engineer were set down in your letter of the 9th of July 1887, No. 178 (Financial), as holding the rank of Superintending Engineer.

2. The explanation contained in your letter under reply of the circumstances under which the Deputy Consulting Engineer obtained temporary rank as a Superintending Engineer “for a few months only, by being promoted in his turn,” does not appear to be satisfactory.

3. The posts of Superintending Engineer are created with the view of placing certain selected officers in positions of special trust and responsibility; and I am unable to see any justification for giving merely formal promotion to any officer, and thereby adding to his emoluments, while his duties remain unchanged, solely because some other officer holding one of the superior appointments, possibly in some distant part of India, is absent on leave or other duty.

4. In connection with this subject, my attention has been directed to the remarks relative to officiating promotions in the Public Works Department

which were made by the Finance Committee; \* and I shall be glad to learn what conclusions you have come to on the recommendations of the Committee, with the purport of which, as at present advised, I entirely agree.

\*See report, Vol. II, page 244, paragraph 40, and page 249, Section XVI.

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No. 68 (Public Works), dated 31st August 1888.

From—The Government of India,

To—The Secretary of State for India.

We have the honour to acknowledge the receipt of Your Lordship's Despatch No. 65 (Financial), dated the 29th February last, and in reply to the first three paragraphs thereof to say that the instructions are being observed which forbid the promotion to the rank of Superintending Engineer of officers who hold the posts of Deputy Consulting Engineer.

2. In the last paragraph of that despatch Your Lordship directs our attention to the remarks of the Finance Committee relative to the officiating promotions to the rank of Executive Engineer in our Public Works Department, and whilst expressing conditional concurrence therewith enquires what conclusions we have come to on the recommendations of the Committee. On this point we have the honour to reply as follows.

3. The Finance Committee's views are, we allow, the only sound views on which a Government Establishment can be built up: that is to say, there should be a certain number of posts of a certain class, and promotion from below should depend on vacancies occurring in those posts. But such promotion is impossible when the number of men holding a certain rank does not depend on the number of posts they have to fill: when, in short, Executive

Engineers are more numerous than the divisions to which they can be appointed, as under our present graded scale they must be.

4. This state of things was sanctioned by Lord Kimberley under the advice of the Government of India in the correspondence ending with his Public Works Despatch No. 71, dated 13th November 1884, in which he allowed a scale consisting of an equal number of Executive and Assistant Engineers; and we cannot now recede from it. The only case in which the correct principle can be applied, and is being applied, is that of Chief and Superintending Engineers and appointments carrying that rank. Below this class the relative number of Executives and of Assistants is fixed under the above system, not by the posts they hold, but by their arithmetical relation to each other.

5. We may add that this measure was, as it were, forced upon us by the pressure of circumstances, over which we had no control at the time, connected with what was then considered and must, we believe, be still considered, the rate of promotion essential for a well-organised and contented service. The principal origin of our difficulty in regard to this question was over-recruitment in past years, and the result now is such slow promotion that the prospects of men would be unjustifiably bad if promotions from class to class were not given on the present system. We are obliged, therefore, for a time to consider the interests of the State's employés more than the interests of the State, and we have put it out of our power to effect an economy which otherwise the Treasury would be entitled to claim. All that we can do is, as time goes on, to moderate the rate of promotion given by the scale so as not to give more than is absolutely necessary, while at the same time giving what may be fairly claimed.

6. The Government of India has not yet pronounced its conclusion as to the principles laid down in the Report of the Public Service Commission; but we think it may be assumed that the general outline of the recommendations as to the division of the Public Works Department into an Imperial and a Provincial Service will be accepted; and we propose, in accordance with those recommendations, rapidly to bring down the number of the Imperial branch, by a greatly diminished recruitment of Imperial, as distinct from Provincial Engineers. We have been engaged for the last year in fixing the number of charges and the proper cadre of each Province, and are still engaged on it; and we shall shortly report the result to Your Lordship. When that is done, the further business remains of distributing this cadre between the two branches of Imperial and Provincial services. We shall then be able to lay down absolutely the proper number to be recruited in England for the Imperial branch; and when the Establishment is once brought down to a proper strength, based on the number of posts to be filled, with a certain allowance for men on furlough or absent from other causes, and for men in training, we shall be able to introduce the rule of promotion advocated by the Finance Committee.

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No. 72 (Public Works), dated 7th September 1888.

From—The Government of India,

To—The Secretary of State for India.

We have the honour to acknowledge the receipt of Your Lordship's Public Works Despatch No. 23, dated 21st June last, in which we are asked to state what number of appointments in the Public Works and Telegraph Departments should be offered for competition among the students who enter the Royal Indian Engineering College in September 1889, and will pass out in 1892.

2. Your Lordship in asking for this information desires that special consideration should be given to the question of recruitment in connection with the

present position of the staff—a subject which has been discussed in recent correspondence.

3. In our Public Works Despatch No. 55, dated 3rd October 1887, after giving careful consideration to the question of recruitment as affecting our present strength, we came to the conclusion that there were no grounds, notwithstanding the existing excess number of Engineers, to take steps to reduce the number of recruits for the year 1891, inasmuch as when that year arrived the excess would have been already reduced to some extent, and because the strength resulting from an annual recruitment of 30 was not in excess of our requirements as then estimated.

4. Since that Despatch was written, we have been carrying out a careful revision of the strength of Engineers required in each branch of our Public Works Department; we have closely examined the needs of each Province, and have laid down the number of charges, and the cadre or strength of establishment necessary to fill those charges, with an allowance for absentees; we have excluded those now lent on "Foreign" service to Native States or Railway Companies, for whose replacement it is unnecessary to provide; and though these enquiries are not yet completely finished, they are so nearly concluded that we are able to state that the total number which should be kept up as the permanent strength of the Department will be approximately 750. Although a recruitment of 30 officers a year would suffice to maintain the Department at this strength under ordinary conditions, we have come to the conclusion that some alteration in the distribution of the recruits will be necessary.

5. The distribution sanctioned by Lord Kimberley as a provisional measure in his Public Works Despatch No. 67, dated 30th October 1884, was as follows :—

Royal Engineers . . . . .	6
Royal Indian Engineering College . . . . .	15
Indian Colleges . . . . .	9
	<hr/>
	30
	<hr/>

It has been decided by Your Lordship that the total strength of the Royal Engineer Corps in India is to be maintained at 350, of whom 250 are to be employed in the Public Works and Military Works Departments. For such a total, a recruitment of six would have been insufficient even if provision had only to be made to supply vacancies caused by deaths and superannuations. But it is obvious that no fixed or average number of recruitments can be laid down when a service has to be kept up at a certain definite figure. In a regiment or corps of a given fixed strength, the number of appointments to be made to it must necessarily be regulated, not by forecast, but by the number of vacancies occurring therein.

6. Again, we still have under our consideration the recommendations of the Public Service Commission in regard to establishing an Imperial and a Provincial Service for our Public Works Department, the former of which would be a *corps d'élite* composed of Royal Engineers and Civil Engineers obtained from Europe; and the latter would consist of Engineers recruited from the Indian Colleges or promoted from subordinate posts. We have not been able as yet to come to any definite conclusions on these proposals, but we have little doubt that the result of our deliberations will be that the Imperial Service will not consist of more than 450 officers, the balance, or about 300 officers, more or less, belonging to the Local Service. Of this 450, 250 will, as already stated, be Royal Engineers, and there will only remain about 200 Civil Engineers appointed from England in the Imperial Service. To keep up this number, a recruitment

of not more than six or seven Civil Engineers annually will be required from the Royal Indian Engineering College.

7. We are afraid that so great a reduction in the number of appointments annually offered by the Indian Government will be detrimental to the prosperity of the Cooper's Hill College; and we cannot but view this prospect with regret. We are also aware that all forecasts of the future are conjectural, and that it is possible that our financial position may in a few years become so much more prosperous as to enable us to devote larger sums to the carrying out of public works, and to entertain a larger establishment for that purpose. For the present, however, we see no reason for anticipating such a favourable revolution in the circumstances of this country, and are obliged to prepare for reducing our establishment to a strength commensurate with the work which it will have to perform. Should our prospects improve in a few years time, it may be possible to increase our indent for recruits.

8. We would therefore desire that the arrangements with the College for the immediate future should be framed on the supposition that not more than six or seven officers will be required from this source; but should it be found very inconvenient suddenly to reduce the present number of 15 appointments by more than one-half at so short a notice, we should be willing that the number should be reduced to ten for the first year (1892), and subsequently to the smaller number, not exceeding seven, which may hereafter be determined.

9. As regards the Telegraph Department, there is no need in our opinion to make any alterations in the present number of two annually, as it is less than would be required to recruit the present strength of the Department; and this number may therefore be maintained.

10. Paragraph 2 of Your Lordship's Despatch regarding the distribution of the students who pass out of the College this year has already been answered, so far as the Public Works Department is concerned, in our Public Works Despatch No. 30, dated 25th May last.

11. A separate Despatch will follow giving the required information concerning the distribution of the students who succeed in obtaining appointments in the Forest Department.

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No. 95 (Public Works), dated 29th October 1888.

From—The Government of India,

To—The Secretary of State for India.

After a correspondence extending over many months, and which first commenced with a call from us addressed to all Local Governments and Administrations for proposals for reducing the Engineer Establishment, we have consented to a reorganisation of the superior appointments of the Public Works Department of Bombay, which is shown in the accompanying tabular statement; and at the same time have effected a general reduction in the Engineer Establishment of that Presidency.

2. The scale of Engineer Establishment previously sanctioned for Bombay consisted of

2 Chief Engineers.

4 Superintending Engineers.

86 Executive and Assistant Engineers.

The senior Chief Engineer was Secretary to the Local Government, and the other Chief Engineer was Joint Secretary; one of the two officers was Chief Engineer of the General Branch, and the other of the Irrigation Branch.

3. The Bombay Government complained that under this system they were limited in their choice of Secretary and Joint Secretary to the two officers who,

on the combined grounds of seniority and merit, had the best claim to the two senior graded posts of the Department; and that consequently even after allowing full scope to selection by merit, as opposed to mere seniority, for these two posts, they were precluded from selecting the men who, in the opinion of the Governor in Council, were best fitted for the appointments, which need administrative rather than professional talent of a high order. They also represented that a Chief Engineer must often be near the time of his retirement, and that the appointment of such a senior officer necessarily involves more frequent changes in the post of Secretary than are convenient. They proposed, therefore, to abolish two of the posts of Superintending Engineer and against the saving so provided to give a staff pay to two officers selected for the posts of Secretary and Joint Secretary.

4. We demurred to this proposal at first on the ground that it was objectionable to make so fundamental a change in the organisation of the Department, an essential feature of which was that the highest professional officer, the Chief Engineer, should also be the professional adviser and mouthpiece of the Head of the Local Government.

5. On this the Bombay Government submitted an amended scheme of reorganisation, under which they retained their 6 superior graded posts as before, but desired to be allowed to select any two of the officers holding these posts for the appointments of Secretary and Joint Secretary, instead of being compelled to appoint the two Chief Engineers.

6. This proposal was under consideration for some time, and meanwhile we had ascertained that the Governor in Council attached great importance to the first scheme in preference to the second. It was apparent, moreover, that, if the principle were once admitted that the administrative adviser of the Local Government should not of necessity be the professional Head of the Department, it would be advisable to widen the area of selection for such appointments by opening them to senior Executive Engineers instead of confining them to Superintending Engineers. On a consideration of these circumstances, therefore, we determined, subject to some minor modifications, to offer no further objection to the original proposals of the Government of Bombay.

7. We accordingly request Your Lordship's sanction to the proposal that the Secretary may draw a staff salary of R750, in addition to the pay of his grade, provided that his total salary, including staff, shall not exceed the pay of a Chief Engineer, 1st Class, and that the Joint Secretary may draw a staff salary of R250 in addition to the pay of his grade as an Executive Engineer. The tenure of the appointment of Secretary is to be limited to 5 years, but an officer will be eligible for reappointment with the sanction of the Government of India. Should the officer holding the post of Secretary at the same time be graded in one of the four superior appointments, it will be allowable to appoint a third Superintending Engineer. This condition will, as shown in the foot-note of the accompanying statement, cause an excess of R150 in one case only, namely, when the post of Secretary is held by a Superintending Engineer of the 1st or 2nd Class. We should further add that we propose to allow the Joint Secretary to draw Presidency allowance in addition to the staff salary of R250, should he be below the rank of 1st grade Executive on the graded scale. This is in accordance with the general rule regarding the grant of Presidency allowance independently of the question of staff salary.

8. It will be observed from the statement that a saving is effected under the scheme in the cost of superior posts including those of the Secretariat. There is also, apart from this scheme, a saving in the number and cost of the Engineer

Establishment. Under these circumstances we would recommend Your Lordship to sanction the proposals under the conditions explained in paragraph 7.

9. It will be further observed from the correspondence, which we submit in full, that we have declined to recommend that the posts of Secretary and Joint Secretary should carry the extra pensions of Rs1,000 which are permissible for Superintending Engineers, unless the officers holding these appointments are at the same time in the superior grades.

10. We request that, if the scheme generally receives Your Lordship's approval, sanction to the staff salaries of the Secretary and Joint Secretary may be communicated by telegram.

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### Measures for mitigating the present excess of Establishment.

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No. 1940 G., dated 3rd October 1887.

From—The Secretary to the Govt. of India, Public Works Dept.,

To—The Secretaries to the Govts. of Bengal and N.-W. Provs. and Oudh.

As it is probable that in consequence of reduced grants for works there will shortly be an excess of officers in the Public Works Department available for employment, I am directed to inform you that it has been decided, subject to approval of the Secretary of State which has been asked for, to offer special leave on the following conditions to a limited number of officers:—

*First.*—The leave will carry ordinary furlough allowances, whether furlough is due or not.

*Second.*—The leave will count as service for pension, but not for furlough.

It will not, however, be counted against furlough at credit when the leave is taken, nor will it form part of the aggregate amount of leave specified in sections 47 and 132 of the Civil Leave Code. It will not interrupt the period of three years necessary to intervene between two periods of ordinary furlough.

*Third.*—It will not be given for more than two years, and officers will be liable to be recalled from it if their services are required after the expiration of one year; if so recalled, or returning at the expiration of the two years, it will be at their own expense.

*Fourth.*—As regards leave subsidiary to this leave, it will be subject to the ordinary rules regarding such leave.

*Fifth.*—Temporary promotions to the Executive class will not be allowed on account of absentees on special leave.

2. I am to request that you will submit a list of officers on the Provincial List who are recommended for this leave and are likely to take it under the terms offered. As it is probable that the Government of India may have surplus officers on the Railway List whom it could transfer, it is not absolutely necessary that the number of officers included in the list should be limited to the number actually surplus on your list; but great care should be exercised in selecting officers to whom, on general or special grounds, it would be desirable to grant such leave.

No. 56 (Public Works), dated 3rd October 1887.

From—The Government of India,  
To—The Secretary of State for India.

In our Despatch No. 39 P.W., dated July 29th, and subsequent telegraphic correspondence in connection therewith, we have asked Your Lordship to grant certain officers leave in extension of furlough which should count as service for pension.

2. Your Lordship will have gathered from the later telegrams that we desired this leave to be offered on the above condition even when no extension of leave was admissible under the rules. On further consideration of our present strength as compared with our requirements, in connection with the present reduced works and grants, we have come to the conclusion that, unless we offer leave generally on specially favourable terms, we are likely to have a certain number of officers, not exceeding fifty, and probably fewer, in excess of our wants, just at present for whom no employment will be found.

3. Under the circumstances, we have decided, subject to Your Lordship's approval, to offer a limited number of Engineers now in India special leave under the terms explained in the accompanying Circular letter, which we have issued calling for names of officers recommended for the leave and likely to take it. In anticipation of Your Lordship's sanction we also propose to offer these terms at once to a limited number of officers of our Railway Branch.

4. It will be observed that the terms of this leave are almost exactly similar to those offered in our Public Works Resolution No. 1605—27 E.G., dated 3rd September 1879, to Royal Engineers, the only difference being that the leave will

*Telegram to Secretary of  
State, dated 20th  
August 1887.*

“Our Public Works Department Despatch, 29th July. If Clift and others do not agree to the terms regarding extension of leave, they may return.”

August quoted in the margin, we decided that the leave should be wholly voluntary.

5. We request that Your Lordship's confirmation of our proceedings may be communicated by telegraph.

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No. 294 (Financial), dated 17th November 1887.

From—The Secretary of State for India,  
To—The Government of India.

I have considered in Council Your Excellency's letters, dated the 29th of July and the 3rd of October, Nos. 39 and 56 (Public Works), regarding the proposal to offer furlough or extension of leave, on specially favourable terms, to a considerable number of officers in the Public Works Department.

2. In my Despatch of the 18th of August last, No. 216, I impressed on your Government the importance of reducing the capital outlay on railways; and I am glad to learn from these letters that you anticipate a reduction in the grants to the Public Works Department. I am, however, not convinced that there is real economy in effecting a temporary diminution in the amount paid for establishments in India, if under another head a large portion of the cost is added to the Home charges, in the shape of furlough allowances in excess of those admissible under the ordinary rules of the Service.

3. Hence, while I carried into effect your wishes as expressed in your letter of the 29th July, and your telegrams of the 13th of June and 20th of August, so far as related to such of the officers therein named as had furlough at their credit, I did not think it right to communicate the offer to those who could not remain unless exceptional privileges were granted to them.

4. I now learn, from your letter of the 3rd of October, that, in anticipation of my sanction, you have offered leave on specially favourable terms to

*Telegram from the Secretary of State, to the Viceroy, dated 15th November 1887.*

“Your Public Works Despatch No. 56, dated 3rd October. Before making further offers, temporary establishments should be reduced. Subject to this condition, I have decided to sanction the proposals.”

a certain number of officers in the Railway branch, and that you propose to make a similar offer to others, the whole number not exceeding 50. In the circumstances, I have sanctioned your proposal as you were informed by my telegram of the 15th November, quoted in the margin.

5. You will have learnt from the weekly lists forwarded to India regarding extension of leave and return to duty, how far the officers mentioned in your telegrams have been permitted to avail themselves of the offer to extend their furlough.

6. In Lord Cranbrook's Despatch of the 5th of February 1880, No. 7 (Public Works), after a great reduction in the strength of the Public Works Department had been held to be necessary, and it had been proposed to adopt the principle of engaging the services of Engineers temporarily when works were undertaken for which the fixed establishment did not suffice, the attention of the Government of India was drawn to the necessity for drawing up the agreements of officers employed temporarily in such a form as to reserve to the Government adequate power of discharging superfluous officers, whenever the establishments of the Department should be in excess of the strength which, with the funds at your disposal, you can profitably employ.

7. With reference to that Despatch, I request that, before making any further use of this sanction, you will, as far as possible, meet the present difficulty of finding employment for officers of the executive grades, by reducing the temporary establishments, and will report to me how far you have been able to act upon this suggestion.

### Measures affecting the Department other than those dealing with the organisation which were the outcome of the Finance Committee's recommendation.

[A copy of these Proceedings was forwarded to Secretary of State with Financial Department No. 188, dated 21st July 1888.]

#### LOCAL ALLOWANCES.

*Proceedings of a Committee held for the purpose of drawing up a scale of local allowances for Officers of the Military Works Department, Public Works Department, and Telegraph Department.*

1st MEETING, MARCH 12TH, 1888.

#### PRESENT :

Mr. Jacob.

„ Reynolds.

Major Broadbent, R.E.

„ Brackenbury, R.E.

Mr. Buckley.

„ Walker.



I. It was determined that a scale should be first drawn up for Baluchistan and Burma. In the absence of any reply from the Chief Commissioner, Assam, to a call made by Government as to what changes he would recommend in the scale now applicable to that Province, it was determined not at present to discuss that scale.

II. It was determined, first, to draw up a scale for superior officers of the Public Works and Telegraph Departments in Baluchistan and Burma.

III. The following proposals were then agreed to as regards the Baluchistan scale :—

*First.*—That local allowance should be drawn—

By members of the Superior Establishment of the Public Works Department, in the Engineer, State Railway, Superior Revenue and Accounts Branches, drawing R1,100 and under.

The grounds for fixing this limit were that there is a margin of R250 between this and the next grade (1,350), so that the grant of the allowances still leaves a considerable difference of salary between the two grades. Generally, it was considered that the grant of allowances in the grades of Superintending and Chief Engineers of the Engineer Establishment, and corresponding grades of other branches and Departments, is unnecessary, but that it is at the same time not desirable so to adjust the allowances that the men in the highest Executive or corresponding grades may be drawing almost the same salary as the men in the class above. This difficulty, it is thought, is obviated by the Committee's proposal.

*Second.*—That the allowance admissible under the preceding rule should be R100.

It was thought by a majority of the Committee, that as the allowance is given to compensate for the greater dearness of certain necessities of life, and as the incidence of such dearness is nearly the same for all superior officers, so far as Government is bound to take cognisance of the fact of such dearness, it is fair that the same allowance should be drawn by all grades alike. (But see Resolution VI.)

*Third.*—That officers of the Superior Establishment of the Telegraph Department up to and including 2nd grade Superintendents should draw allowances on the same scale.

IV. The scale for Burma was then considered. It was found that the Chief Commissioner, Burma, had more than once pronounced a decided opinion that the present scale for Lower Burma, which permits the allowance to men drawing R800 and under only, was sufficient and should continue for Upper as well as Lower Burma. On the other hand, it was found that the Director General of Telegraphs considered that in Upper Burma the present rate of frontier allowances, which is, in some cases, higher than the Public Works scale, and also extends to the highest grades, should continue. Again, the Departmental officers of the Public Works Department considered that in consequence of the expense of living, the allowances in Upper Burma should be extended to the upper grades.

It was, therefore, determined to recommend that the case, as regards the allowances to be drawn by Public Works Department in Upper Burma, be again referred to the Chief Commissioner, for consideration of the question

whether the scale proposed for Baluchistan in each branch should be allowed for Upper Burma only; the scale for Lower Burma remaining as at present.

*Secondly.*—It was recommended that the Superior Establishment of the Telegraph Department should be placed on the same footing as the Public Works Department in Upper and Lower Burma, respectively; according to this, Telegraph Officers in Lower Burma would draw an allowance of R100, subject to a maximum for salary, *plus* local allowance, of R900; the present Pegu or special locality allowance being abolished.

V. The case of the Upper Subordinate Establishment in Baluchistan was then considered, and it was resolved to recommend the following scale:—

(a)—An allowance of R80—

For Sub-Engineers.

For Accountants, 1st and 2nd grades.

For classes G and H Subordinates, Revenue Establishment, State Railways.

For Sub-Assistant Superintendents, 1st grade, Telegraph Department.

(b)—An allowance of R60—

For Supervisors.

For Accountants, 3rd grade.

For class F Subordinates, Revenue Establishment, State Railways.

For Sub-Assistant Superintendents, 2nd grade, Telegraph Department.

(c)—An allowance of R40—

For Overseers.

For Accountants, 4th grade.

For class E Subordinates, Revenue Establishment, State Railways.

For Inspectors, Telegraph Department.

(d)—Classes A to D of the Subordinate State Railway Revenue Establishment, if any, to continue to draw their present allowances. These classes, it is observed, are gradually disappearing, and no new appointments are made.

(e)—It was considered unnecessary to make any provision for unclassified men appointed by Managers; the rate of pay given to these should continue to be governed by the regulations in force. See also Regulation IX.

## 2ND MEETING, MARCH 14TH.

Members present as before.

### VI. Apprentice Engineers and Examiners, Baluchistan and Burma.

The allowance to Apprentice Engineers in Burma under the original orders was R100. No provision was made in the original orders for Apprentice Examiners, but under a very recent order an allowance of R50 only was granted to them. It was considered that in future an allowance of R50 for apprentices belonging to each of these classes was ample.

### VII. The case of men of the Public Works and Telegraph Departments

below the class of Upper Subordinates was fully discussed, and the following proposals were agreed to:—

- (1)—That 30 per cent. on salaries ranging from R30 upwards, subject to a maximum allowance of R40; and 50 per cent. on salaries under R30, subject to a maximum of R8, should be given to men of the following classes serving in Baluchistan and Burma:—

*Public Works Department*—To Sub-Overseers and Clerks not engaged locally.

*Telegraph Department*.—To Telegraph Masters, Signallers, Lower Subordinate Line Establishment, and Clerks not engaged locally.\*

These rates should take the place of ordinary and special locality allowances of the Telegraph Department, p. 10, p. 43, Telegraph Department Code, but should not be extended to any individuals to whom allowances are not now admissible.

- (2)—As regards places in Burma at which double ordinary rates are now drawn by men of certain classes in the Telegraph Department; men drawing R30 and upwards to draw 45 per cent. on salaries, subject to a maximum allowance of R40; men drawing under R30 to receive 50 per cent. on salaries without any maximum. The classes and places are as follows:—

Signalling Establishment at Moungdoo, Pabroo, Rue, Toung-hoop, Myitta and Elephant Point; signalling and line establishment on the telegraph route between Tavoy and the junction with the telegraph line of the Siam Government (excluding Tavoy itself), and the route *via* Myawaddi, between Moulmein and the junction with the telegraph line of the Siam Government (but excluding Moulmein itself).

- (3)—It was recognised by the Committee that the above proposals tend somewhat to raise the allowances of these classes in the Telegraph Department; but they are more economical than those recommended in 1882 by the Director General of Telegraphs, and are much simpler than the existing scales of locality and frontier allowances for Baluchistan and Burma which they will supersede. It is also understood that the grant of these better allowances may reduce the number of transfers with their attendant expense to Government.

- (4)—The Committee strongly recommends that all clerical establishments should be locally engaged on consolidated rates of pay, to obviate the necessity of the grant of local allowances. All the unclassified staff of the Subordinate Establishment of State Railways would be so engaged as a matter of course.

### 3RD MEETING, MARCH 16TH.

Members present as before.

VIII.—The case of allowances drawn by certain subordinates of the Railway Branch within the Province of Sindh was considered, and it was decided to

\* In the case of signalling establishment, Natives of the Province only are held to be locally engaged (see Telegraph Department Code, p. 14, P. 44, edition of 1887).

recommend that the allowances sanctioned for subordinates of classes E to G, stationed in the Laki pass,\* which correspond to the present Baluchistan Frontier allowances, should be superseded by those proposed for subordinates in Resolution V. The personal allowances sanctioned under the Resolution quoted above, to men drawing on the old Indus Valley State Railway scale of allowances are not affected.

IX.—It was decided to state clearly that the recommendations of the Committee do not affect the allowances drawn by the running establishment of State Railways, such as, *e.g.*, the percentage on overtime and mileage drawn under Resolution No. 581 R.E. of 16th August 1882.

X.—The special locality allowances drawn by the Telegraph Department in places outside Burma and Baluchistan (para. 60 of Mr. Jacob's note) were then considered; and it was decided to make the following recommendations:—

- (a)—That all local allowances granted to the Signalling Establishment in the Bombay Presidency should be withdrawn; the special conditions under which they were sanctioned in 1886-87 being no longer applicable.
- (b)—That Lower Subordinate line Establishment of the Karwar-Hubli Section should draw the new ordinary rate recommended for this class in Resolution VII (1).
- (c)—That the allowances for Rajputana, Indore, and Malabar having become obsolete, should be definitely withdrawn.
- (d)—That the Signalling Establishment in Paumben should draw the new ordinary rate recommended in Resolution VII (1).
- (e)—It was observed that no allowances were drawn by the Signalling Establishment at Vythery and Devala now; but it was recommended that the Signalling Establishment when stationed at those places should draw at the new special rate of Resolution VII (2).
- (f)—That the Lower Subordinate line Establishment at the following places should draw the new special rate [Resolution VII (2)].

From Calicut through Devala to Ootacamund.

„ Ootacamund to Mysore.

„ „ to Metapolium.

„ „ through Coonoor to Kotagiri.

„ On the local lines at Ootacamund.

The above Resolution disposes of the special locality allowances in places outside Burma and Assam mentioned in pages 10-13 of the Telegraph Code corrected to 31st December 1887.

XI.—Allowance to Upper Subordinates at Doomagudiam in the Upper Godavari (para. 51 of Mr. Jacob's note). This allowance is drawn under Resolution No. 1235, dated 30th July 1869, which sanctioned the Presidency allowances for officers stationed in the Upper Godavari. It was found on enquiry from Madras that the only person now drawing allowances under this order was a Supervisor who draws Rs30 (the Presidency allowance rate as modified by the Madras Government). It was considered that this should be continued.

XII.—Allowances at Potinghy Ghât and the Wynaad (para. 50, Mr. Jacob's note).

It was observed that this case was under enquiry in the Public Works Department. At present the allowances are drawn without any limit of pay,

and it was considered that whatever decision was come to as to the allowances to be given, they should not be drawn by men of a higher grade than 3rd class Superintending Engineers (Resolution No. III).

XIII.—No reply having yet been received from Assam, notwithstanding repeated reminders, the Committee cannot make any recommendations regarding the allowances for that Province.

MARCH 20TH, 1888.

Members present as before, excepting Major Broadbent, R.E.

XIV. The case of the allowances to be drawn by officers of the Madras Establishment employed on the Periar project having been referred to the Committee, it was considered that the scale proposed for Baluchistan in Resolutions III, V, and VII should be adopted.

The following memorandum was recorded by Mr. C. H. Reynolds to be appended to the proceedings.

In appending my signature to these proceedings, I wish to state, with reference to Resolution X (a), that I find on enquiry that the case of the Signalling Establishment employed in the presidency town of Bombay is one requiring some further investigation, and I beg to suggest that a final decision on it may be reserved until the Director General of Telegraphs has had an opportunity of again reporting on the question.

22nd March 1888.

C. H. R.

No. 60 (Public Works), dated 3rd August 1888.

From—The Government of India.

To—The Secretary of State for India.

Your Lordship's Despatches noted on the margin have remained long unanswered owing to our having had the whole question of the allowances drawn on our North-Western Frontier, as well as in other parts of India, under consideration; in view, not only of the question as to their continuance, regarding which information was desired by Your Lordship in the Despatches above quoted, but of other questions affecting them which were raised by the report of the Finance Committee.

2. Bearing in mind the remarks of Your Lordship's predecessors and Your Lordship, when communicating sanction to these allowances, that they are objectionable in principle, except on very special grounds, we caused a careful scrutiny to be made of the local allowances granted, in all parts of India, on account of expensiveness of living, to officers of our Public Works, including Military Works and Telegraph Departments, and we called for opinions on the subject from the local officers and from our Directors General of Railways and of Telegraphs. Eventually when the information was complete we appointed a Departmental Committee to consider the whole question in view of the opinions thus obtained.

3. This Committee carefully considered the whole question of these allowances in all parts of India except in Assam, the information for which was incomplete, and in the Presidency Towns, which have been separately dealt with; and made certain recommendations which have been generally accepted by us.

The general principles on which the Committee proceeded were, that a maximum salary should be fixed beyond which no local allowances should be

given, that the allowance should compensate officers for the extra expense of the necessities of living with some reference to their rank in life, and that the allowances for the Departments dealt with should be as nearly as possible assimilated. The grade of Superintending Engineer, 3rd class (Civil Pay Rs1,100) was selected as the highest grade which should carry local allowance in addition to pay, because this is the first grade at which a wide margin occurs between the rate of pay fixed for it and for the next higher grade; and it was considered desirable, while fixing a maximum salary which should carry the allowance, to maintain a margin between the salary, including the allowance, of the lower grade and the pay alone of the higher. As a matter of principle, it was considered that the allowance was not absolutely necessary for any officer above the rank of Executive Engineer, 1st grade (rate of Civil Pay Rs950).

4. In regard to the allowances in Baluchistan which have been under discussion in the correspondence connected with the Despatches quoted in paragraph 1, it was quite clear to us as well as the Committee that the expenses of living, in spite of the opening of the Railway, are still so great in Baluchistan, that it would be absolutely necessary to give some allowances to officers stationed there; unless we were willing to submit to the anomalous position that those officers, who have to be specially selected for work on the frontier, should be mulcted in a considerable sum, in addition to being put to great discomfort, as compared with officers stationed in more favoured Provinces.

5. After considering the recommendations made by the Committee, we have sanctioned for all officers of the Public Works Department and Telegraph Department in Baluchistan the allowances shown in the accompanying schedule. For purposes of comparison, and for Your Lordship's information, we have shown side by side with these the allowances which were drawn under previous sanctions. It will be observed that, on the whole, the revised allowances are much less than the former ones. The new allowances will have effect from the 1st April last.

6. These allowances having been only just sanctioned, we are not yet in a position to state what their monthly cost will be, and, as the matter has been so long under discussion, we consider it better not to delay the reply to Your Lordship's Despatches any further. We would, however, ask Your Lordship's sanction to these revised allowances for Baluchistan to the several Departments named being continued for the present.

Should the opening of the Railway have any appreciable effect upon prices and cost of living, we shall take steps to reduce or abolish the allowances.

7. In reply to the last clause of paragraph 3 of Your Lordship's Despatch of the 17th March 1887, regarding the allowances granted to officers in other Departments, we have the honour to observe that the allowances shown in the

	Pay. Rs	Frontier allowance. Rs	margin have hitherto been granted to officers of the Civil Department employed in Baluchistan; but these allowances have also been under consideration in connection with the general question, with the result that they have
Agency Surgeon . . . . .	850	350	
Extra Assistant Commissioner . . . . .	500	150	
Chaplain . . . . .	500	75	
Native Assistant Agent to the Governor General, Sibi . . . . .	400	150	
Assistant Surgeon, Khelat . . . . .	100 to 200	50	
Munsiff, Quetta . . . . .	150	45	
Hospital Assistant . . . . .	20 to 55	30%	
Clerical and other establishments above the passes. . . . .	200 and less	30%	
Clerical and other establishments below the passes. . . . .			
Police . . . . .	10 to 30	17%	
Menial servants . . . . .		8-8	

On salary.

been generally reduced. A further communication regarding them will be addressed to Your Lordship when the matter has been disposed of, as promised in our Financial Despatch No. 188, dated 21st July 1888.

8. With reference to paragraphs 2 and 3 of the Despatch of the 23rd June 1887, we have the honour to state that the Rindli-Quetta Section of the Bolan Railway was open to traffic in March 1887, while the Sind-Pishin Railway from Sibi to Quetta, *via* Bostan, was opened under restrictions in August 1887. As we have already observed, we have assured ourselves that there has not been time yet for the opening of the Railway to have any appreciable effect on the cost of living in Baluchistan.

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### Practical training of Native Engineers in England.

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No. 13 (Public Works), dated 24th March 1887.

From—The Secretary of State for India,

To—The Government of India.

In Your Excellency's Public Works letter No. 8, dated 15th February 1887, it is reported that Mr. D. M. Litster, Executive Engineer, and Mr. O. Oertel, Assistant Engineer, of your Public Works Department, have been selected for the purpose of going through a practical course of training in this country.

2. I have given instructions that the necessary arrangements should be made to enable these officers to enter on their course on their arrival in England, but, in giving my sanction to your proceedings, I wish again to draw Your Excellency's attention to the question whether, and to what extent, it is desirable to continue the practice of sending officers of your Public Works Department to this country to acquire practical experience at the public expense.

3. In my predecessor's Despatch of 6th November 1884, No. 70 (Public Works), serious doubts were expressed whether the continuance of this practice was worth the considerable expense involved in it. Your Excellency's Government, in a letter dated 22nd December 1885, No. 51 (Public Works), expressed a desire to give the experiment a further trial, and, accordingly, no objection was made by my predecessor to your wishes in regard to the officers selected for training in 1886.

Your Government should, however, now be in a position to arrive at some definite conclusion as to the value of the results that have been obtained, taking into account the expense and administrative inconvenience involved; and, before the privilege is again offered to other officers, I should wish to receive a full report on the subject, supported by the opinions of the local authorities under whom the Engineers who have already received an English training have subsequently served.

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No. 63 (Public Works), dated 31st October 1887.

From—The Government of India,

To—The Secretary of State for India.

We have the honour to acknowledge receipt of Your Lordship's Despatch No. 13 (Public Works), dated 24th March, in which a full report is asked for as to the results of the experiment of sending Engineers, who are natives of India, for a period of training in England at the expense of the State, to enable a decision to be arrived at as to whether the experiment should be continued or terminated.

2. On receipt of Your Lordship's Despatch we consulted those Governments under whom the officers named in the margin had been serving after completing their period of training in England, as to the practical advantage these officers had derived from their training, and the desirability of continuing the experiment; we append copies in full of the replies received for Your Lordship's perusal.

3. We have ourselves carefully considered these replies, and the reports which from time to time have been forwarded by Your Lordship regarding the progress made by these and the other officers who have been sent to England; and we append for Your Lordship's perusal a schedule which gives in abstract the names of those who have been sent and the principal incidents of interest in connection with their training. We have also perused the correspondence on which the experiment originated and that which has taken place regarding it during the last five years.

4. Our conclusion is that the training in England is an undoubted advantage to those officers who have a real desire to profit by it, but that it ought to be largely paid for by the men themselves. At present we estimate that the cost to the State of sending each officer to England is approximately R14,000, which is out of proportion, in most cases, to any advantage the State can receive.

5. We consider also that it is proved that pure Natives are not much disposed to avail themselves of the training, and that those who do avail themselves of it derive little benefit from it. Natives in the statutory sense of the term, are, however, disposed to readily avail themselves of the training, and in most cases benefit considerably by it. Considering that the tendency in future is likely to be in the direction of the larger employment of this class, our opinion is that it would be wise to extend the privilege to specially-selected Natives, chiefly of this class, in future, subject to the condition expressed in paragraph 4, that they contribute largely to the expense.

6. We would propose, therefore, in future to send annually to England not more than two specially-selected officers who might be willing to go on condition of receiving two-thirds of their Indian pay, and R1,000 to assist in defraying the expense of the voyage to and from England. We would limit the age of the selected officers to 30 years for the present year, to 28 for next year, and after that to 25 years.

7. The above proposals would reduce the cost to the State to between seven and eight thousand rupees for each officer. We shall cause those who have already applied under the old conditions to be informed of the proposed changes, and shall enquire whether they still desire to proceed to England under the changed conditions. On receipt of Your Lordship's instructions, final orders will be issued.

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No. 69 (Public Works), dated 8th December 1887.

From—The Secretary of State for India,

To—The Government of India.

Your Excellency's Public Works letter No. 63, dated the 31st October 1887, in respect to the annual sending of two Native Engineers of your Public Works Department to England for practical training, has received my consideration in Council.

2. The reports transmitted with your letter of the results hitherto attained by the procedure in question are by no means encouraging, but you are never-



theless disposed to recommend a continuance of the practice, provided the Engineers sent home be limited to specially-selected officers of the class defined by statute as natives of India, their pay while at home being limited to two-thirds of their Indian rate of pay, and assistance from Government being restricted to the grant of Rs. 1,000 in each case to assist in defraying cost of passages to and from England. With these limitations, you propose that two members of your Public Works Department shall be annually sent home for practical instruction.

3. The reports periodically submitted to this Office of the progress made in this country by the officers hitherto sent home have not been of such a nature as to show that any material advantages were being derived from their course of study here, and it was the consideration of this fact which induced me to address you on the subject by my Public Works Despatch No. 13 of the 24th March 1887.

4. The reports by the Local Governments now sent home by your Government only confirm me in the belief that the State has not benefited in any appreciable degree by the grant of the privilege in question, and I am not disposed, therefore, to sanction a continuance as a rule of the arrangement, even with the limitations proposed in your letter under reply.

5. At the same time I am prepared to encourage any *bond fide* desire on the part of members of the Department of the class indicated above, supported by their immediate superiors, for improving their professional and general knowledge by a visit to Europe, and shall be ready to receive and favourably consider cases of a very special character which may arise from time to time, and which you may deem desirable, in the public interests, to recommend for acceptance. The financial limitations suggested by you in all such cases have my approval.

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No. 116 G., dated 16th January 1888.

Resolution by the Government of India, Public Works Department.

Read again—

Resolution in the Public Works Department, No. 1541—57 G., dated 29th November 1882, on the subject of practical training of native Engineers in England.

Read—

Despatch from the Secretary of State for India, to the Government of India, No. 13 P.W., dated 24th March 1887.

Despatch to Secretary of State, No. 63 P.W., dated 31st October 1887.

Despatch from Secretary of State, No. 69 P.W., dated 8th December 1887.

OBSERVATIONS.—The Resolution of 1882, now read again, indicated the procedure under which, as an experiment, not more than two Native Engineers annually were to be sent to England at the public expense for professional training.

2. Under these orders, ten young Engineers, being natives or domiciled Europeans, have been sent to England in the five years from 1883 to 1887 inclusive.

3. In March last, the Secretary of State called for a full report on the results that had been obtained from the experiment, and for a definite opinion of this Government as to their value.

4. A report was accordingly obtained from the several Local Governments concerned as to the value of the experience gained in England by the officers

who, after having passed a period of training there, had returned to their work in this country.

Bombay.  
Bengal.  
Punjab.

5. The three Local Governments consulted were of opinion that the value of the training was not commensurate with the expense incurred.

6. The Government of India, on a perusal of the reports from the Local Governments and of the reports on the progress of the several officers while under training, forwarded from time to time by the Secretary of State, was of opinion that training in England is an undoubted advantage to those officers who have a real desire to profit by it; but that the expenses of it ought to be largely contributed to by the officers themselves.

7. Accordingly, it was recommended that the contribution made by the State should be limited to paying the officers, while absent from duty in India, two-thirds of their salary only, together with an allowance of Rs1,000 to assist in defraying the expense of the voyage to and from England. And it was proposed to continue to send annually to England not more than two carefully-selected officers who were willing to accept the modified terms.

8. The orders of the Secretary of State on these proposals have now been received. His Lordship accepts the modified financial conditions proposed by the Government of India; but, in view of the reports received as to the success of the experiment, is inclined only to consider cases of a very special character, which may arise from time to time, and which this Government may deem desirable to recommend in the public interest.

9. In view of these orders, it is now necessary to call for revised recommendations on behalf of young Engineers who fulfil the condition of being natives or domiciled Europeans. Such recommendations should be carefully made on behalf of those only who shew a *bond fide* desire to improve their professional knowledge, and must be strongly supported by their immediate superiors, on the ground that the officers possess the necessary qualifications for profiting by their deputation to England.

10. All previous recommendations will, under these orders, be considered as cancelled, and should not be repeated unless they can be now brought forward as cases to be specially considered under the new orders by the Government of India and by the Secretary of State.

The age of officers recommended should be limited for this year (1888) to 30 years, for next year to 28, and thereafter to 25 years.

ORDER.—Ordered, that this Resolution be forwarded to the Local Govern-

The Governments of Madras, Bombay, Bengal, the North-Western Provinces and Oudh, and the Punjab.

The Chief Commissioners of the Central Provinces, Burma, <sup>Upper</sup> Assam, and <sup>Lower</sup> Assam, and Georg.

The Resident at Hyderabad.

The Agents to the Governor General for Central India, Rajputana, and Baluchistan.

The Director General of Railways.

The Consulting Engineers to the Government of India for Railways, Calcutta, Central Division, and Lucknow.

ments, Administrations and officers noted on the margin; also that it be published in Part I of the *Gazette of India*.

### Royal Engineers placed on the retired or half-pay list.

No. 3 (Public Works), dated 10th January 1888.

From—The Government of India,

To—The Secretary of State for India.

In paragraph 6 of our Military Despatch No. 166, dated 18th October 1886,

relative to the continuous Indian service of officers of Royal Engineers, under the conditions laid down in the Royal Warrant of 20th February 1886, we made certain proposals regarding the pay—*first*, of officers serving in a Civil Department and placed *on the retired list*; and *secondly*, of officers serving in the Public Works Department, Military Works Department, or Survey Department, and placed *on half pay*.

Our proposal in regard to the second class was that officers so placed should draw the consolidated pay of their grade in the department, with the net military pay of their regimental rank previous to removal to half pay.

2. In paragraph 4 of Your Lordship's Military Despatch No. 38, dated 3rd February 1887, it was stated that the proposed rules for the pay of officers after retirement were approved. This ruling, however, apparently covers only the first proposed rule referred to in the preceding paragraph, and it is necessary to obtain distinct orders on the second rule regarding officers placed on half pay.

3. On further consideration of the circumstances under which an officer under the new regulations is placed on half pay and retains his former appointment, and of the effect which the proposed rule would have, we consider it desirable to amend our former proposals.

4. It must be observed that this new system of placing an officer on half pay is entirely different from that which used to obtain. A Lieutenant-Colonel of Royal Engineers now placed on half pay after five years in that rank is, if re-employed, precisely under the same conditions as the old senior Lieutenant-Colonels and Colonels of the corps: all the higher appointments will, in future, be held by these half-pay officers, and being on half pay in that position will be the rule and not the exception. It would seem to follow from this that the Lieutenant-Colonel on half pay should draw precisely the same allowance while serving in the department as if he were on full pay in the rank—that is, he should continue to draw the allowance that he drew before he was placed on the half-pay list. Similarly, a Major who under the age clause is promoted to Lieutenant-Colonel on half pay should receive the allowances he would draw as a full-pay Lieutenant-Colonel.

5. It would in many cases inflict considerable loss upon an officer to bring him, on being placed on the half-pay list, from the staff to the consolidated scale of departmental pay, and a number of difficult questions would arise connected with the calculations of his future emoluments, on which he based his original election of one scale or the other before these new rules were thought of.

6. After full consideration of the case, we recommend that the salaries of officers placed on the half-pay list should not in any way be affected by the change—that is to say, that they should draw the staff or consolidated pay of their departmental grade, as before, and the military pay of their half-pay rank in the corps.

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No. 53 (Military), dated 8th March 1888.

From—The Secretary of State for India,  
To—The Government of India.

I have received and considered in Council your Despatch in the Public Works Department, No. 3 of the 10th January last.

2. I approve of officers of Royal Engineers serving in the Public Works Department, when placed on half pay under the Royal Warrant for pay and promotion in the Army, being allowed to draw the staff or consolidated pay of

their departmental grade, as before, and the military pay of their substantive half-pay rank.

3. With reference to the remark in the 2nd paragraph of your Despatch under reply, that the ruling contained in my Military Despatch No. 38 of the 3rd February 1887 did not apparently cover the case of officers placed on half pay, I may inform you that the term "retirement" in the 4th paragraph of my Despatch was intended to include "removal from regiments or corps" in the terms of the Pay and Promotion Warrant.

### Rectification of date from which Subalterns of Royal Engineers join the Department.

No. 34 (Public Works), dated 23rd September 1886.

From—The Secretary of State for India,  
To—The Government of India.

I forward herewith copy of a letter, dated 28th July last, from the War Office, directing attention to a paragraph of the Report of the Joint War Office and India Office Committee on the Establishment of Royal Engineers to be retained in India, in which the present system of grading Royal Engineers with Civil Engineers on their first appointment to the Public Works Department is commented on.

2. This Report was forwarded to you with my predecessor's Despatch in the Military Department, No. 101, dated the 15th April 1886, and the matter referred to is, for the reasons stated by the War Office, one to call for the careful consideration of your Government.

3. In requesting to be furnished with Your Excellency's views on the point raised in regard to the first appointment of Royal Engineers and Civil Engineers to your Public Works Department, I would remind you of the discussions which have taken place on the subject of the relative positions of the Civil and Military members of the Department, and of the desire which has been expressed by my predecessors in office, in which I fully concur, to establish their relations on a perfectly equitable footing.

4. At the same time there appears to me *prima facie* evidence that young Royal Engineer officers have been placed at some disadvantage on their joining the Public Works Department, and if, after considering the subject, you are of opinion that there is ground for complaint on behalf of these officers, I shall be glad to receive any suggestion which you may have to make for altering the present system of grading them on their first appointment.

No. 66 (Public Works), dated 31st October 1887.

From—The Government of India,  
To—The Secretary of State for India.

We have the honour to acknowledge the receipt of Your Lordship's Despatch No. 34 (Public Works), dated 23rd September 1886, forwarding certain correspondence from the War Office regarding the present system of grading Royal Engineer officers on their first appointment to the Public Works Department, and the disadvantage at which they are placed in comparison with the Engineers

appointed from Cooper's Hill, whose appointments date from the time of passing out of the College.

2. The matter has been carefully considered by us, and we are of opinion that in this particular respect there is an inequality between the young Royal Engineers and the officers from Cooper's Hill who entered the Department annually as recruits; and we should be willing to formulate a rule under which Royal Engineer subalterns recruited since the year 1872, when the Cooper's Hill Engineers first entered the Department, should count their departmental service as commencing two and a half years after date of first commission, provided that they should not add more than, say, one year to their actual service in the Department.

3. Such a rule would place Royal Engineers and Cooper's Hill Engineers as nearly as could be on an equality in respect of the age at which departmental service begins to count. The men from the Indian Colleges join the Department as apprentices and do not come into competition with either Royal Engineers or with those from Cooper's Hill, until at least a year, and generally a longer period, has elapsed since they passed out of College; so that Royal Engineers cannot be at any disadvantage in respect to this class.

4. With reference to the remarks in the third paragraph of Your Lordship's Despatch under reply, we append a Minute by our honourable colleague Sir Theodore Hope expressing his views regarding the relative position of Royal and Civil Engineers in the Public Works Department.

5. A Minute on the same subject by the Honourable General Chesney will follow.

No. 2 (Public Works), dated 19th January 1888.

From—The Secretary of State for India,

To—The Government of India.

Your Excellency's Public Works letter No. 66, dated the 31st October 1887, suggests, in reply to my Public Works Despatch No. 34, dated 23rd September 1886, the formulation of a rule under which Royal Engineer subalterns recruited since 1872 (when Cooper's Hill College Engineers first joined the Indian Public Works Department) should be permitted to count their departmental service as commencing  $2\frac{1}{2}$  years after date of first commission, provided that they do not add more than one year to their actual service in the Department.

2. The laying down of such a rule would, in your opinion, remove an existing inequality between the Royal Engineer and civilian officers of the Department in respect to their first entry into the public service, and would place them as nearly as practicable on an equal footing as regards the age at which departmental service begins to count.

3. The remarks of the Joint Committee of the War Office and this Office on the establishment of Royal Engineers to be retained in India, as transmitted to you with my Public Works Despatch No. 34, dated 23rd September 1886, evidently pointed to the adoption of some such arrangement as that proposed by you, and as your Government, after a careful consideration of the matter, has decided on recommending this concession to Royal Engineer officers on their first joining the Department, I am prepared to assent to your proposed ruling. In doing this, however, I would remark that, as the principle on which advancement in the Department is based is selection for merit, the influence of seniority

alone will be of secondary importance in most cases, and I see no reason to dissent from the views expressed in Lord Salisbury's Public Works Despatch No. 61 of 9th November 1876, which was referred to in Sir T. Hope's Minute of 31st October 1887.

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No. 613 G., dated 14th March 1888.

Resolution by the Government of India, Public Works Department.

Read again—

Despatch No. 34 P.W., dated 23rd September 1886, from the Secretary of State for India.

Despatch No. 66 P.W., dated 31st October 1887, to the Secretary of State for India.

Read also—

Despatch No. 2 P.W., dated 19th January 1888, from the Secretary of State for India.

**RESOLUTION.**—The present system of grading subalterns of Royal Engineers on their first appointment to the Public Works Department with Civil Engineers, has been under the consideration of the Secretary of State and the Government of India, in connection with the question of the establishment of Royal Engineers to be retained in India.

2. The conclusion arrived at is, that under the existing system young Royal Engineer officers, whose service in the Department commences from the date on which they first join, are placed at a disadvantage in comparison with the Engineers appointed from the Royal Indian Engineering College at Cooper's Hill, who count service in the Department from the date on which they leave college, to go through a course of practical training, either in England or India.

3. After a full consideration of the relative ages at which the students of the Royal Indian Engineering College obtain their appointments and the Royal Engineers obtain their first commissions, it is considered that the two classes would be placed on an equality by allowing Royal Engineers who enter the Department as subalterns after more than two and a half years' military service, to account their service in the Department as commencing two and a half years after the date of their first commission.

4. His Excellency the Governor General in Council is therefore pleased to rule, with the concurrence of the Secretary of State, that subalterns of Royal Engineers, appointed to the Department subsequent to the year 1872, when Engineers from the Royal Indian Engineering College first entered the Department, shall count their departmental service as commencing two and a half years after date of first commission, unless the actual date at which they joined was earlier; provided that no officer shall add more than one year to his actual service in the Department under this rule.

5. In publishing this decision, the Governor General in Council desires it shall be recognised in the Department generally that Departmental seniority gives no absolute claim to promotion, since, in the words of the Secretary of State's Despatch of 19th January 1888, the principle on which advancement in the Department is based, is selection for merit, the influence of seniority alone being of secondary importance in most cases.

The Governments of Madras, Bombay, Bengal, the North-Western Provinces and Oudh, and the Punjab.

The Chief Commissioners of the Central Provinces, Burma <sup>Upper,</sup>  
Lower  
Assam, and Coorg.

The Resident at Hyderabad.

The Agents to the Governor General for Central India, Rajputana, and Baluchistan.

The Accountant General, Public Works Department.

The Inspector General of Military Works.

The Director General of Railways.

The Consulting Engineers to the Government of India for Railways, Calcutta, Central Division, and Lucknow.

The Director General of Telegraphs.

The Director, Persian Telegraph.

The Director, Persian Gulf Telegraph.

The Superintendent of Works, Simla Imperial Circle.

**ORDER.**—Ordered, that this Resolution be communicated to the Local Governments, Administrations, and Officers noted on the margin, for information.

Ordered, also, that copy be forwarded to the Military Department.

### Method of selection for appointment to the superior posts of the Public Works Department.

No. 2048 G., dated 14th October 1887.

From—The Under-Secretary to the Govt. of India, Public Works Department,  
To—The Governments of Bengal, North-Western Provinces and Oudh, and the Punjab; the Chief Commissioners of Central Provinces, Upper and Lower Burma, and Assam; the Resident at Hyderabad; the Agents to the Governor General for Central India and Rajputana.

I am directed to forward, for careful perusal, a note that has been prepared

\* Superintending Engineers, Chief Engineers, State Railway Superior Revenue Establishments, Posts in the Government of India Secretariat.

in this Office regarding the prospects of promotion of the Members of the Engineer Establishment to the higher administrative posts\* of the Department.

2. As the note itself is of a somewhat technical nature, it will be well to state clearly the points that are considered to be brought out by it. These are—

*First.*—That the number of superior posts being small, compared with the strength of the Department, it can be mathematically demonstrated that only a small proportion of officers can eventually obtain promotion beyond the executive grades.

*Secondly.*—This being the case, it is necessary that a system of rigid selection be put in force, so as to ensure that the best men are selected. Unless this is done, not only will the Department suffer in efficiency, but those men who by their abilities are specially fitted for the superior posts, and who, owing to the small number of appointments, cannot attain them, will have a real cause of grievance against Government for bringing about a state of things injurious to their prospects.

*Thirdly.*—It is probable that if a system of careful selection be applied, as opposed to that of seniority, the selection being limited between certain periods of service, the great majority of those fitted for the superior appointments of the Department will succeed in obtaining them.

*Fourthly.*—That the greater the subdivision of lists, the more nearly are the prospects of promotion reduced to the conditions of a lottery.

3. It will doubtless be admitted that comparatively rapid promotion to posts of responsibility is the best means by which men can be trained to hold, with

efficiency, the highest appointments in the Department. At the present time the rate at which men of ability are being promoted is being continually retarded, as the upper grades of the executive class become crowded; and it has probably reached a point at which the efficiency of the administrative establishment is threatened. In other words, men are not promoted to the Superintending Engineer class until they reach the age of 46 to 48 years, whereas to secure an efficient establishment they should be promoted at about the age of 40. The following figures bring out clearly the fact of the retardation:—

*Average age of men promoted to Superintending Engineer.*

					Years of age.
Five years	.	.	.	1868—1872	36½
"	.	.	.	1873—1877	40
"	.	.	.	1878—1882	42½
"	.	.	.	1883—1887	45½
In the year	.	.	.	1886	46½
"	.	.	.	1887	47

The ages taken are those of permanent promotion.

The result of this advance in age for promotion is two-fold: first, the men when promoted are actually less fit for the higher posts of the service, than they were at an earlier period; secondly, they use their ability with less force than they could do were a longer period of usefulness before them.

For some time to come, no doubt, until the Engineer Establishment reaches a *normal* and healthy condition,—a condition, that is, in which the regular recruiting of the last few years begins to tell,—it will be necessary to select men considerably over the age of 40 for promotion in order to save those eminently fitted by their ability for the higher posts from being passed over; but in order to serve the interests of the Department generally, and of the best men in the Department, it is necessary that Local Governments should refrain from recommending men for promotion merely because they are approaching the age of 50, at which, if not promoted previously, they can be made to retire; and they must make up their minds to sacrifice mere mediocrity in order to do justice to proved ability.

By *ability*, it should be explained, is meant that facility which is found in a naturally able man who has had varied experience on works.

4. The above conclusions follow from the first three points enumerated in paragraph 2. In regard to the fourth it is observed that on the Government of India Establishment the promotions to the Superintending Engineer class are now made on six different lists, including the Military Works Department, but that subsequent promotions from the Superintending Engineer class to the Chief Engineer class are made more or less on one list. The tendency on the whole is for the promotions to run on three main lists:—

The Railway list.  
 „ Buildings and Roads.  
 „ Irrigation.

Could the promotions to and within the administrative classes be wholly on these three main lists, there is no doubt that the promotion of the Department generally would be far more even and better distributed than it is at present; when the first promotion to Superintending Engineer class is on separate lists. The hypothetical promotions made in the accompanying note are made on one list, and by this means it is found that few of the selected men eventually lose promotion; but if an isolated list, such as that of Bombay, is taken alone, it



appears to be inevitable that a proportion of the men who ought to be promoted, lose promotion altogether, or else that a state of the Establishment, which is bad from an administrative point of view, is produced.

5. These facts merit serious consideration, and the aid of the Local Governments is desirable in order to prevent a state of things that threatens the efficiency of the Department. The following proposals are now put forward for full consideration :—

*First.*—That Local Governments on the Government of India list should divide all 1st grade Executive Engineers who are forty years of age and over into two classes, to be named A and B,—and should forward every year a very full report as to the qualifications of each man in class A.

*Secondly.*—That the Government of India, taking the list of class A men from the several Provinces, should nominate men in their order for promotion, taking the age and all the facts fully into consideration; it would probably be advisable, in every three selections thus made for promotion, to give preference to seniority, provided it is combined with fair ability, in one case; and in the other two, to select wholly by professional merit. The list of men so selected and placed in their order for promotion will form the final class A list, from which appointments will be made as in the third proposal.

*Thirdly.*—Local Governments will then be called upon to appoint to officiating or other vacancies, the men who are next on the Government of India list for promotion, irrespective of the local list to which they belong.

Under the above system it is very likely that a certain number of men placed in class A by the Local Governments will never obtain promotion; but it is better that this should be so than that the Administrative Establishment should suffer in efficiency. That the system may work with greater fairness, it will be necessary that Local Governments should give greater weight to merit when making promotions to 1st grade Executive Engineer.

Local Governments are requested to give their opinions on the proposal made in this paragraph after careful consideration of the facts brought forward.

The Governments of Madras and Bombay will also be invited, in the interests of the members of their establishments, to join the confederation of other lists with a view to opening a larger number of appointments to their Engineers, and to avoiding the serious block which is inevitable on an isolated list.

6. In connection with the small proportion of men who can ultimately look for promotion to the higher appointments, attention must also be invited to the fact that under Public Works Code, Chapter I, paragraph 10, Executive Engineers, 1st grade, who surrender all claim to promotion to the Superintending Engineer class, are entitled to two increments of Rs50 after periods of four years' service. Hitherto very few men have elected to take this increment, because they hope on for promotion and decline to include themselves in what may be in some sense considered an inefficient class. It is doubtless unjust that such men should be placed in a position which makes them refuse increased pay (which is really due to them), because they are ignorant of the fact that they have no hope of promotion; and greater weight attaches to this view when it is remembered that all the men who are placed in class B are or soon will be liable to be retired at the age of 50 years. At the present moment, taking all the 1st grade Exe-

cutive Engineers who have passed the age of 40, and so, on the age hypothesis, are eligible for promotion, it is believed that about 40 should have taken the increment on the understanding that they will never be promoted. Some few of these are doubtless already drawing the increment, but very few compared with the number who might be drawing it. If, then, the suggestions made in paragraph 5, that Local Governments should prepare lists of class A men which should undergo a further process of selection by the Government of India, are finally accepted, it will be possible to inform those men who are not placed in class A that they can take the increment without any fear of injuring their own prospects.

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No. 2591 G., dated 6th October 1888.

Resolution by the Government of India, Public Works Department.

*Necessity of a strict system of Selection for the superior posts of the Public Works Department.*

Read again—

Circular letter No. 2048 G., dated 14th October 1887, regarding the prospects of promotion to the superior grades of the Department.

Read—

Replies from the several Local Governments and Administrations to that Circular.

**OBSERVATIONS.**—In the circular letter quoted in the preamble it was shown that, owing to the small number of superior posts in the Department compared with the total strength, only a small proportion of the officers employed could ever hope for promotion to the highest appointments. Consequently, it was pointed out that, to secure the appointment of the best officers to those posts, it is necessary to exercise a strict system of selection as opposed to that of pure seniority, in promoting officers to the higher grades.

2. To attain this end three proposals were put forward in that letter,—

*First*,—That separate rosters of men selected or rejected for the Superintending Engineer class should be prepared and maintained by Local Governments and Administrations.

*Secondly*,—That a further selection should be made by the Government of India from those rosters.

*Thirdly*,—That the men so selected should be appointed to the higher posts on the several Provincial and other lists, irrespective of the particular list to which they had hitherto belonged.

3. After consideration of the replies received from Local Governments, the Government of India has come to the conclusion that the third proposal cannot practically be carried out as a general rule, and may be abandoned; but this will not prevent such transfers being carried out, as at present, when desirable on special grounds. The other two proposals will be adopted, and in future the principle of selection advocated in the circular will be carried out with the utmost strictness, in regard to promoting officers to the rank of Superintending and Chief Engineer and posts of corresponding rank.

4. It is therefore necessary that all Local Governments and Administrations should be especially careful in maintaining a continuous record of character to enable them to make proper recommendations regarding officers of the rank of 1st grade Executive Engineer and above. A register will also be maintained of all such recommendations in the office of the Secretary of the Government

of India, Public Works Department, and the selections for promotion will be mainly made on the recommendations contained in the register. In order to render this register effective, it is necessary that the recommendations so sent up should be very carefully considered, and be made more full and complete than is the case at present. The assistance of Local Governments and Administrations is particularly invited in order to bring this about, and the following instructions are promulgated with the same object.

**RESOLUTION.**—On the 1st of January next and every succeeding year, recommendations should be carefully prepared in full, and without reference to any previous reports that may have hitherto been sent up, concerning all Executive Engineers in the first grade whom the Local Government considers fit for promotion to Superintending Engineer. Each Local Government will also furnish a list, not necessarily containing any remarks, of the men in the first grade of Executive Engineers whom it considers unfit for promotion to the rank of Superintending Engineer.

2. The recommendations regarding the selected men should be made under the following four heads :—

- |                    |  |              |
|--------------------|--|--------------|
| 1. Professional.   |  | 3. Personal. |
| 2. Administrative. |  | 4. General.  |

3. A register of such recommendations should be kept up by the Local Governments as a continuous record of the officers' characters and qualifications in order to facilitate the preparation of subsequent recommendations.

4. The recommendations sent forward to the Government of India should be recorded on a separate sheet for each man. It is not necessary that these recommendations should be drawn up in any particular form. All that is necessary is that the name and rank of each officer should be stated on the sheet, that the information required in paragraph 2 should be clearly given, and that the document should be signed in full by the officer who prepares the recommendation for the acceptance of the Head of the Administration.

5. The Government of India will maintain registers of the recommendations so forwarded, and by their help will prepare a roster of men selected for promotion to Superintending Engineer.

6. Similar recommendations should be furnished of officers who are already Superintending Engineers, in regard to their fitness for promotion to the post of Chief Engineer.

7. No recommendations, unless specially asked for, need be furnished regarding officers who are already substantive Chief Engineers.

8. It is requested that the recommendations sent up under these orders may be submitted to the Head of the Local Government or Administration, and the fact of his concurrence in them invariably recorded. In the case of Superintending and temporary Chief Engineers who are Secretaries to Local Governments or Administrations, the recommendation should be made by the Head of the Administration himself in the covering letter.

9. Recommendations regarding Consulting Engineers for Railways should be prepared in the office of the Secretary to the Government of India, Public Works Department, for entry in the register after approval by Government.

10. It will be the special duty of the Director General of Railways and of the Inspector General of Irrigation to bring to the notice of the Government of India any special information, as to the character of officers, which they may obtain on their inspection tours, and with the consent of Government to have such report entered in the register.

**ORDER.**—Ordered, that the above be forwarded to all Local Governments, The Governments of Madras, Bombay, Bengal, the North-Western Provinces and Oudh, and the Punjab Administrations, and officers noted in the margin, for information and guidance.

The Chief Commissioners of the Central Provinces, Burma, Assam, and Coorg.  
The Resident at Hyderabad.  
The Agents to the Governor General for Rajputana, Central India, and Baluchistan.  
The Director General of Railways.

Ordered also, that copy be forwarded to the Consulting Engineers to the Government of India for Railways, Calcutta, Central Division and Lucknow, with request that the attention of Agents of Railway Companies under whom Government Officers are employed may be drawn to the orders.

### Office of Director General of Railways and decentralisation of Railway Control.

No. 339 (Financial), dated 10th November 1884.

From—The Government of India,  
To—The Secretary of State for India.

We have had under our consideration for some time the question of the re-organisation of the office of the Director General of Railways, and we have now the honour to forward, for Your Lordship's information, a memorandum drawn up by that officer showing the present state of the office, and the arrangements required to enable it efficiently to carry on the work required from it.

2. It will be evident to Your Lordship that an immediate change is imperatively necessary, and that without a thorough reformation our constantly increasing business in connection with railways is in danger of falling into utter confusion. When the office was formed in 1879 by a combination of the offices of the several Directors, we authorized the Director General to carry on his Secretariat duties as Deputy Secretary with the clerical staff of the Director General's office; and that plan has been followed up to the present time, the cost of the establishment being charged in equal proportions against the estimate for the control of Guaranteed Railways and that for State Railways. But with the expansion of work it has become impossible to adhere to this plan any longer. Great confusion exists in the records of the two offices, and the clerks are unable to cope successfully with the double work.

3. We have therefore assented to the proposal of the Director General to effect a complete separation of the Secretariat office from that of the Director General of Railways, charging the former against the Civil estimates, to which class of expenditure it properly belongs, and amalgamating it with the rest of our Public Works Secretariat. The Director General's office will continue to be charged as heretofore. The Director General of Railways will continue to carry on his double functions of Deputy Secretary and Director General, and the newly-constituted branch will be in the immediate charge of the Under-Secretary in the Railway Branch, acting under the orders of the Deputy Secretary and Secretary.

4. It has been found by experience that the rates of pay in the Director General's office are not sufficient to secure the services of properly qualified clerks in the higher posts. It is necessary that the Director General should be in a position to select men who, by actual contact with the working of railways, are possessed of good practical technical knowledge; and such men generally in their local posts draw salaries which they are not willing to exchange for those which the Director General is now empowered to offer. It is also evident that a

considerable increase of numerical strength is needed. The present permanent establishment is supplemented by a large temporary establishment costing about Rs1,300 a month; but the arrangement is exceedingly unsatisfactory, as the men, imperfectly qualified in the first instance, are not willing to remain in the office when any prospect of permanent employment elsewhere presents itself.

5. The Director General's proposals, so far as they require Your Lordship's sanction, are to raise the salaries as follows :—

		Present.		Proposed.	
		R	R	R	R
Superintendent	. . . . .	400	to 500	600	to 700
1st grade clerks	. . . . .	325	„ 400	400	„ 600
2nd „ „	. . . . .	210	„ 300	300	„ 400
3rd „ „	. . . . .			200	„ 300

and to increase the numbers in the several grades.

6. We do not consider that so large an increase need be given to the Superintendent and to the 1st grade clerks, and we propose to fix the pay of the former at Rs500—600, and of the latter at Rs400—500. But the numerical increase we consider to be absolutely necessary. This is shown in the following table :—

Present establishment of the Director General's office.		Proposed establishment of the Director General's office.		Proposed establishment of the Railway Branch of the Secretariat.	
R R		R R		R R	
1 Superintendent	. 400 to 500	1 Superintendent	. 500 to 600		
1 Clerk, 1st grade	. 325 „ 400	3 Clerks, 1st grade	. 400 „ 500	2 Clerks, 1st grade	325 to 400
5 Clerks, 2nd grade	210 „ 300	4 „ 2nd „	. 300 „ 400	1 Clerk, 2nd „	210 „ 300
		5 „ 3rd „	. 200 „ 300		

The rates of pay in the Railway Branch are those which hold in the Public Works Secretariat.

7. We consider the matter so urgent that we have provisionally sanctioned the proposed revision, subject to the following conditions, until Your Lordship's sanction is received :—

(1) The pay of no officer of the present establishment shall be increased if he is already in receipt of Rs250 a month or more, or raised to more than Rs250 a month.

(2) No persons shall be newly appointed on higher pay than Rs250 a month, unless transferred from other Government offices, in which case they may receive the pay they are at present drawing in those offices.

8. We shall be glad if Your Lordship will accord early sanction to our proposals.

No. 18 (Railway), dated 19th February 1885.

From—The Secretary of State for India,

To—The Government of India.

Your predecessor's letter in the Department of Finance and Commerce, No. 339, dated the 10th November 1884, submitting proposals for the reorgan-

isation of the office of your Director General of Railways, has received my consideration in Council.

2. These proposals provide for a division of the existing staff of the office, the Secretariat portion being placed under the immediate charge of the Under-Secretary in your Railway Branch, and the cost thereof charged against the Civil estimates, while the Director General's staff will remain under his immediate charge, its cost continuing to form a charge against Public Works estimates. At the same time the Director General of Railways will exercise a general supervision over both branches of work.

3. I learn from your letter and its enclosures that the present clerical staff working in the Director General's office No. 43, together with 19 doing the work of the Railway Branch of the Public Works office, and that it is proposed to increase this number to 75 for the Director General's office alone, in addition to 12 who will be assigned to the Railway Branch of the Secretariat to be placed under the Under-Secretary in your Railway Branch. The total cost of this increase, including menial staff, amounts to R6,269 per mensem, or R75,228 per annum, for R41,304 per annum of which (taking the salaries at the mean between the minimum and maximum rates given in para. 6 of your letter) my sanction is desired, owing to new appointments and increases of salary over the limit of R250 per mensem, the remainder having already been authorised by your Government.

4. Colonel Stanton, in the Note on his department which accompanies your letter, dwells strongly on the necessity for increasing the strength and raising the salaries of his staff, and your Government fully support that officer's recommendations as being "imperatively necessary," while you add that, "without a thorough reformation," your "constantly increasing business in connection with railways is in danger of falling into utter confusion."

5. I have given my best attention to Colonel Stanton's Report, and to the opinions of your Government as to the necessity for the proposed increase and its urgency, and I should not have been disposed to question the force of these representations, had I been satisfied of the real necessity or expediency of maintaining such an office in connection with your Government as that which has grown up under the Director General of State Railways.

6. But so far from being of opinion that an office such as this should be maintained and permitted to expand as the railway system of India is developed, I am convinced that steps should be taken to reduce the magnitude of this vast centralised establishment, and to obviate as far as practicable the necessity for its future enlargement.

7. The unusual dimensions to which this office has now grown, accepting the increased scale as that which may be regarded as requisite for the proper discharge of its functions, is shown by the fact that the numbers of the clerical staff are almost as great as those of the entire Financial Secretary's office, and that, together with the proposed Railway Branch in the Public Works office, the whole establishment will exceed that of the Military Department.

8. I cannot avoid the conclusion that the development of the centralised Railway Administration under the Government of India has been too long allowed to proceed without serious question, and that the time has come when a determined effort should be made to transfer the chief part at least of the railway administrative business from the central Government to the local administrations.

9. I would therefore again invite the attention of Your Excellency's Government to the opinions which were expressed by one of my predecessors, upon

this most important subject, with the remark that up to the present time no adequate reply has been made to the Despatch from which I am about to quote, and that I must now request your early careful consideration of the whole matter.

10. In this Railway Despatch, No. 21, dated 26th February 1880, paras. 6 to 10, Lord Cranbrook wrote as follows :—

“6. Before pronouncing upon the other specific arrangements set forth in Your Excellency’s letter, I desire to say a few words on the general principles on which it seems to me desirable to act in the organisation of the Railway Department.

“7. When the Government of India first undertook to carry out railways through the direct agency of its own officers, it was inevitable, in the absence of local experience in railway construction, that a Department should be organized under that Government to superintend operations. But it is in accordance with all the recent and wholesome tendencies of our administration, that the central Government should free itself, as far as possible, of direct executive functions, and specially that it should not maintain a system in which the executive acts of the officers of any branch of duty are subject to no review but one which must be in great measure exercised by members of their own body. There is but too much reason to fear that evil results have arisen from this cause in the particular Department now in question. The State Railways are now far advanced in all provinces where they have been undertaken, whilst in several provinces they have already been placed, more or less completely, under the Provincial Governments. And it seems to me that the rule should be made general of handing over, as soon as possible, to Local Governments the construction of lines in progress, and their management when completed.

“8. There may be lines, such as those in progress on the frontier or in Native States, to which the general rule may not be easily applicable. But, if it be applied as far as practicable, it will much reduce the extent of the work to be undertaken by the central authority, whilst it will add incentives to economy by establishing local financial responsibility for working.

“9. In any case, it should be the declared aim of the Government of India to divest itself, wherever possible, of the direct management of railways, whether under construction or in operation. Where open railways are thus worked under the Provincial Government, it is a suggestion worthy of consideration whether it might not be practicable for these also to relieve themselves beneficially of a large amount of interference in detail, by the introduction of consultative Boards selected from the local officials and the local mercantile community.

“10. In this view of the future course to be followed, the duties which you propose to assign to the Deputy Secretary in the Railway Department, in the new capacity of Director General, will be progressively restricted, and the necessity for the separate office will possibly cease. But meanwhile, I sanction the proposed constitution of the office. I also approve, for the reasons you have urged, of the retention of a Director of Stores and of a Director of Railways in Bengal as a provincial officer, as explained in the 14th para. of Your Excellency’s letter. It should, however, be carefully considered by the Local Government whether, as in the analogous case of the North-West Provinces, economy may not be secured in the manner consistent with efficiency, by some union of the duties of the Railway Branch with the ordinary branch of the Public Works Department.”

11. With the general scope of these remarks I entirely concur.

12. I do not fail to recognize that the policy of decentralisation of the railway administration will be a difficult and intricate task to carry out, but of its absolute necessity at no remote date, and of the ultimate advantages to which it will lead, I have no doubt. That the railway system of a tract as large as the greater part of Europe can be satisfactorily managed by a single central authority is out of the question, and the difficulty of efficient control over details is rendered greater, or, more truly, such control is made impossible, by the enormous and constantly increasing burden of other administrative duties which unavoidably fall on the Government of India.

13. The true position of Your Excellency’s Government is one of control, and so far as it is possible, all executive duties should be made to fall on the

local executive Governments. That the administrative work hitherto performed in respect to railways in the offices now directly under the Government of India cannot be transferred to the various Local Governments or administrations without increase of expense is possible or even probable. But I cannot doubt that the management will in the end be much more efficient, and there seems no reason why the railway administration should not be as well conducted locally as that of all the other branches of duty which are now almost wholly entrusted to the Governors, Lieutenant-Governors, and Chief Commissioners of the various provinces of India.

14. In giving effect to the instructions now conveyed to Your Excellency, I consider that it will be of essential importance that the Local Governments should be consulted, so that all proper weight may be given to their views on a subject in which they will be so directly interested.

15. For the reasons which are contained in this Despatch I am, therefore, unable to sanction the increases of establishment or of salaries asked for, but I shall not withhold my approval of the additions already made by your Government in the subordinate grades, on the understanding that they are considered provisional and temporary.

No. 19 (Public Works), dated 27th March 1888.

From—The Government of India,

To—The Secretary of State for India.

We now have the honour to report on the action which we have taken on

Despatch to Secretary of State, No. 283 F. & C., dated 1st November 1887.

Despatch from Secretary of State, No. 138 Ry., dated 8th December 1887.

Despatch to Secretary of State, No. 5 P. W., dated 10th January 1888.

Despatch from Secretary of State, No. 17 Ry., dated 23rd February 1888.

Your Lordship's Despatch No. 75 (Railway), dated 14th July 1887, and the subsequent Despatches which have passed between us and Your Lordship, as noted in the margin, on the subject of the office of our Director General of

Railways, and the work done by that office.

2. The correspondence, which has extended over some years, and which is summarised in Your Lordship's Despatch of the 14th July, is mainly concerned with two points:—

*First.*—The decentralisation of Railway business, by taking it out of the hands of the Government of India and of the Director General of Railways, who acts as Agent for that Government in disposing of certain Railway business, and placing it with Local Governments.

*Second.*—The office establishment required either by the Director General of Railways or by the Government of India to carry on the business which it retains.

3. As regards the first, it is observed that the following may be taken as a correct description and classification of the work that has to be done by Government for Railways in India:—

- (a) the control, chiefly financial, exercised by Government, *in its own interests*, over both the Guaranteed and State Railways,—that is to say, that portion of the Government Railway work which is entailed on the Indian Government, owing to the financial interest it has in the undertakings, and which is not undertaken by any Government Department in England;



(b) the control over Railways exercised by Government *in the interests of the public*,—that is to say, that portion of the Government Railway work in this country which in England is carried out under the control of Parliament.

4. As regards the first main division of work, it has been stated in previous despatches that the Government of India has already done a great deal in the matter of transferring the control of Railways to Local Governments; and at the present time, the only lines which are under the control of the Director General of Railways, acting on behalf of the Government of India, are—

	Miles.
1. The North-Western Railway, with the Sind-Sagar, Sind-Pishin, and the two feeders, Amritsar-Pathankot and Rajpura-Patiala . . . . .	2,511½
2. The Bengal and North-Western Railway . . . . .	376½
3. The Dibrugarh-Makum . . . . .	77½
4. The Tounghoo-Mandalay . . . . .	220

Steps are now being taken to transfer the work connected with the second of the above lines to the Consulting Engineer, Lucknow; the third will be transferred to the Assam Government; and the fourth to the Chief Commissioner, Burma.

5. Thus the only line left with the Director General of Railways will be the North-Western Railway, the most important of all. In order thoroughly to carry out the principle of decentralisation, as to the propriety of which we are in accord with Your Lordship and previous Secretaries of State, it will be necessary to transfer the North-Western Railway to the control of the Punjab Government; but before this can be done, many important arrangements have to be made which need time and opportunity for consultation with the local authorities. The question will be at once taken up and referred to the Punjab Government, but it will be necessary to frame our present proposals for office establishment on the supposition that the North-Western Railway will, for a time, remain under its present administration.

6. Another field for decentralisation lies in the work connected with the East Indian Railway and the Companies' lines noted in the margin, which comes up to the Government of India from the Consulting Engineers of Calcutta, Lucknow, and the Central Division. It

Oudh and Rohilkhand.  
Indian Midland Railway.  
Bengal-Nagpur.

\* Despatch to Secretary of State No. 45 B., dated 13th May 1871.

was definitely decided in 1871 \* that inconvenience was caused by placing under one local Government a line like the East Indian Railway which runs through two large and important Provinces; and there may be difficulty in altering the present arrangements. The matter will, however, be reconsidered, and the views of the Governments of Bengal and the North-West Provinces and Oudh will be invited as to the propriety of the change indicated. One advantage which may be foreseen is that if the East Indian Railway is placed under the control of the Bengal Government, and the Oudh and Rohilkhand Railway under that of the North-West Provinces Government, the Consulting Engineers for those lines could be utilised as Railway Secretaries to the Local Governments concerned, and would thus strengthen their administration of Railway work generally without any additional expense. The Indian Midland and Bengal-Nagpur Railways, while under construction, must remain under the Government of India; but they might possibly be transferred, on completion, to the Local Governments of Bombay and Bengal respectively. This will not, however, be for some little time to come. For the

present, therefore, arrangements must be made on the understanding that the present conditions under which these lines are managed are unaltered.

7. So far, then, as the decentralisation of the financial and administrative control of specified Railways is concerned, the only immediate effect which the Government of India is able to give to the policy laid down by Your Lordship is the transfer of three comparatively unimportant lines to certain Local Governments. But it is hoped that larger measures in the same direction may be carried out before long. It is only in respect of the North-Western Railway that the original and special functions of the Director General of Railways as exercising a centralised control over State Railways will continue to survive.

8. In regard to the second main head of work, which, as stated in paragraph 3, has to be carried out by Government for the Railways in the interest of the public, it is observed that the following functions have to be provided for by some central authority :—

- (i) the final decision on all questions connected with the survey and construction of new lines of Railway ;
- (ii) contracts and agreements with Railway Companies ;
- (iii) the control over the Government Inspectors appointed under the Railway Act ;
- (iv) the settlement of maximum and minimum rates and fares ;
- (v) all standing orders, bye-laws, and standard types of every description, for general adoption ;
- (vi) general statistics, administration reports, and other information of a general character ;
- (vii) control over stores ;

Roughly speaking, with the exception of item (vii), this is simply the work done in England by the Railway Department of the Board of Trade, under the authority of Parliament.

In the first three classes of work it is considered essential that the Government of India should exercise direct control in its Railway Branch, subordinate, of course, in regard to sub-head (ii) to the Secretary of State, and in free consultation, as regards sub-head (i), with Local Governments. As the law at present stands, the control of sub-head (iii), at least as far as concerns inspection of new lines previous to declaring them open, cannot be transferred to Local Governments. The fourth and fifth sub-heads are those which involve most technical knowledge and which it is specially desirable to deal with on a uniform system ; but no general order can be passed on the fourth sub-head except by the Government of India. The compilation of the statistics and administration reports must necessarily be carried on in a central office ; and the work that is done in regard to indents in the Store Department of the India Office is necessitated by the orders which the Government of India has received from Your Lordship and your predecessors. The work that comes up under the first four sub-heads will therefore be disposed of ordinarily in the Railway Branch of the Government of India, being noted on by the Director General of Railways as Deputy Secretary, and that under the last three heads by the Director General of Railways generally in his own name, only difficult or specially important questions being referred to the Government of India.

9. It follows from the above considerations that we are unable as yet to divest the Director General of Railways of any important part of his functions, or to recommend for the present any very large reduction in the establishment which, whether directly under the Government of India, or under the Director General of Railways acting on its behalf, deals with these important matters.

10. We consider, however, that some immediate economy, as well as in, creased efficiency in our own Secretariat, may be gained by amalgamating the Office of the Director General of Railways with the Railway Branch of the Office of the Government of India, and that the further decentralisation of financial and administrative control, which is contemplated in paragraphs 4 to 7, will ultimately facilitate this. Great waste of power and reduplication of work have been entailed by the complete separation of these two Offices, and we have now arranged that all the work of the kind referred to in paragraphs 7 and 8 should be carried on in a single office.

11. We have accordingly brought the sections of the Office of the Director General of Railways noted in the margin, into the Railway Branch of our Secretariat, with effect from the 1st April, and have amalgamated the Establishment and General Sections of that Office with the General Sections of the Secretariat; we have similarly transferred the Drawing Sections; and, lastly, we have handed over the Audit Section of the Director General of Railways' Office to the Accountant General, Public Works Department.

12. The effect of this arrangement is that the Director General's Office Establishment, consisting of 75 Accountants and Clerks, and costing Rs11,996, disappears as a separate establishment, and is distributed with somewhat reduced numbers and cost between the Secretariat and the Accountant General's Office.

The numerical and financial effect upon the latter offices is as follows :—

	BEFORE THE PRESENT AMALGAMATION.		AFTER THE PRESENT AMALGAMATION.	
	No.	Cost.	No.	Cost.
		<i>R</i>		<i>R</i>
Public Works Secretariat . . .	43	6,852½	105	15,941½
Accountant General's Office, Accountants and Clerks . . .	43	7,291½	48	7,876
	—	—	—	—
TOTAL . . .	86	14,144	153	23,817½
	—	—	—	—

The increase accordingly on these two Offices is—

In number . . . . .	67
In cost . . . . .	Rs9,673½

as against the decrease by the abolition of the separate offices—

In number . . . . .	75
In cost . . . . .	Rs11,983

or a net decrease—

In number . . . . .	8
In cost . . . . .	Rs2,309½

To this may be added a saving of about Rs100 in menial establishment. Thus the total saving due to the whole reorganisation may be put down in round numbers at Rs2,400 a month or Rs28,800 annually.

13. The superior clerical appointments sanctioned for the Office of the Director General of Railways when it formerly carried on the Railway work of our Secretariat were as follows :—

* Sanctioned in Secretary of State's Despatch No. 241, dated 11th August 1881,	1 Clerk on . . . . .	400—500*
	1 " " . . . . .	325—400
	5 Clerks on . . . . .	210—300

and when the Office of the Director General of Railways was separately constituted, sanction was asked\* to the following :—  
 \* Despatch No. 339 Financial, dated 10th November 1884.

*For the Railway Branch of the Secretariat.*

	R
2 Clerks on . . . . .	325—400
1 Clerk on . . . . .	210—300

*For the Office of the Director General of Railways.*

	R
1 Superintendent on . . . . .	500—600
3 Clerks on . . . . .	400—500
4 „ . . . . .	300—400
5 „ . . . . .	200—300

Sanction was withheld to the establishment for the Office of the Director General of Railways in Lord Kimberley's Despatch No. 18 Ry., dated 19th February 1885; but temporary sanction was accorded in His Lordship's telegram, dated 21st April 1885, which has been continued up to the 31st March next, in Your Lordship's Despatch No. 17 Ry., dated 23rd February 1888.

14. The appointments on the above superior rates of pay which we propose in the Secretariat, after taking over the work and establishment of the Director General of Railways, are as follows :—

	R
3 Clerks on . . . . .	400—500
4 „ . . . . .	300—400
5 „ . . . . .	200—300

As compared with the original sanction of 1881, the additional appointments are—

	R
2 Clerks on . . . . .	400—500
3 „ . . . . .	300—400

but if it be considered that the proposals made in our Despatch No. 339, dated 10th November 1884, with regard to the appointments in the Railway Branch were accepted, while only those of the Office of the Director General of Railways were objected to, sanction is only required now to—

	R
2 Clerks on . . . . .	400—500
1 Clerk on . . . . .	300—400

We would now request that sanction may be accorded to these appointments so as to bring up the whole scale in the amalgamated office to that which we are convinced is necessary to carry on the duties properly. One result of the above recommendations is to bring into the Secretariat three clerks on R400—500, which rate, though higher than the rates hitherto drawn by any clerk below the rank of Registrar in the Public Works Secretariat, was proposed throughout this correspondence for the clerks of the Director General of Railways' Office, and is, we think, necessary for the proper performance of the duties of Superintendent, in the three more important sections of work now taken over by the Secretariat, as enumerated in paragraph 11.

15. The changes which will be brought about by the arrangements above referred to, and others which we recommend in the distribution of responsibility and the conduct of work may be summed up thus :—

- (a) the Director General of Railways to have under his direct charge only the North-Western Railway and the Amran extension, the other Railways mentioned in paragraph 4 being transferred to the Local Governments

- (b) the Director General of Railways to be invested with powers of inspection over all the Railways in India;
- (c) the returns connected with general traffic, statistics, Revenue accounts, half-yearly working estimates, and the correspondence with Inspecting Officers regarding half-yearly inspections, accidents, and inspection of lines before opening, to be sent to and dealt with by the Director General of Railways;
- (d) indents for stores sent home by all Railways, State or Guaranteed, to be reviewed in the Railway Branch by the Director General of Railways; but with regard to Guaranteed Railways, his functions to be limited to giving information as to surplus stores existing on other lines;
- (e) all questions connected with the issuing of standard types and professional standing orders in connection with Railways, to be referred to the Director General and disposed of by him in concert with the Consulting Engineer for State Railways;
- (f) the staff of the Railway Branch to be as follows :—
  - 1 Under-Secretary and Deputy Director General of Railways, who shall have charge of the office when the Director General is on tour, and shall be vested with his powers or such of his powers as may be convenient.
  - 3 Assistant Secretaries in charge of
    - Stores and Establishments.
    - Traffic and Statistics.
    - Construction.

Thus instead of one Under-Secretary in the Railway Branch and four Assistants to the Director General of Railways, we shall have in future one Under-Secretary and Deputy Director General and three Assistant Secretaries in the Railway Branch; one Assistant to the Director General of Railways being set free for employment elsewhere. But we wish the Director General of Railways, as Deputy Secretary, to retain the powers granted in Lord Kimberley's Despatch No. 139 (Financial), dated 10th May 1883, of attaching one additional officer to the office when necessary.

16. In conclusion, we trust that the measure of decentralisation proposed may be accepted, and that Your Lordship's sanction may no longer be refused to the appointments proposed in paragraph 14. Any further reductions in the subordinate grades of the office, which may be possible, in the event of the further measures of decentralisation touched upon in paragraphs 5 and 6 eventually taking shape, will be carried out as opportunity offers.

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No. 80 (Public Works), dated 1st October 1888.

From—The Government of India,  
To—The Secretary of State for India.

Referring to paragraph 5 of our Public Works Despatch No. 19, dated 27th March 1888, in which we wrote of the North-Western Railway as the only line now left under the control of the Director General of Railways, and referred to the possibility of transferring it to the control of the Punjab Government, we have now the honour to report for Your Lordship's information the result of our consideration of the question, and to forward copies of the correspondence noted below which has passed between us and the Government of the Punjab on the subject.

2. The Punjab Government thinks that there are serious objections to the transfer on military grounds, and doubts if any administrative advantage would be gained. The Lieutenant-Governor also shrinks from the additional labour which would be thrown upon his Government, and from which it would receive

no countervailing benefit, as it is not proposed, and would not be possible, to provincialise the Railway in a financial sense.

3. The question has also been carefully considered in our Military Department, and has been referred for the opinion of His Excellency the Commander-in-Chief.

4. His Excellency the Commander-in-Chief and the other Military authorities consulted, agree in thinking that the transfer should be objected to, on the ground that the railways which make up the North-Western System are composed to a great extent of military lines which have little or no commercial value, and which would never have been constructed except on military considerations; and they consider that in case of war it will be of the greatest importance for the Government of India to have the control of these lines under an officer such as the Director General of Railways, who would be immediately under their orders, and in intimate communication with the military authorities at Army Headquarters—advantages which would be lost if the Head of the Railway were an officer of any provincial government.

5. With this weight of authoritative opinion against the transfer, we would express a hope that Your Lordship will not further press for the control of the North-Western Railway being transferred to the Government of the Punjab, but will allow it to continue as at present under the control of our Director General of Railways.

6. Your Lordship will be further addressed hereafter regarding the other measures of decentralisation referred to in our Despatch of last March, which have still to be discussed.

### **Managerial Staff, State Railways.**

No. 241 (Finance & Commerce), dated 20th September 1887.

From—The Government of India,

To—The Secretary of State for India.

In correspondence ending with Lord Hartington's Despatch No. 12, dated

	£	s.	d.	
Superior Staff, Locomotive Department	5	0	0	19th January 1882, mileage scale, as shown in the margin, was sanctioned for certain classes of our State Railway Revenue Establishment. Hitherto the staff for the <i>management</i> of our State Railways has been based on a fixed scale modified according to the sanctions given from time to time to meet requirements. Thus a certain scale was proposed in our Despatch No. 185 R., dated 22nd December 1880, based on the staff necessary for the railways then actually under direct State management, and approved in Lord Hartington's Despatch No. 64 R., dated 28th April 1881. This scale was subsequently increased by the managerial posts provided for the Eastern Bengal State Railway and the North-Western Railway in our Financial Despatches Nos. 293 and 294, dated 20th October 1885. Meanwhile some of the posts sanctioned in 1881 have lapsed through the transfer of railways to Companies, while other corresponding posts have taken their place on the opening of new railways.
Candidates for Locomotive Department	0	6	0	
Superior Staff, Traffic Department	6	0	0	
Candidates for Traffic Department	0	4	0	
Subordinate Staff, Classes G and H, for all Departments	11	0	0	

2. Much inconvenience has been caused by having a fixed scale of this kind against which to entertain the managerial establishment in consequence of the rapidly changing circumstances of the railways; and, after full consideration, we have no doubt that it would be more convenient to substitute for a mileage scale a mileage limit within which appointments might be sanctioned by us.

3. The scale which is at present considered necessary for the lines under Government management is detailed in the accompanying statement A ; and this approximates closely to the establishment now actually entertained, based on the existing sanctions which have been enumerated in paragraph 1. This scale is worked into a form for calculating the cost per mile in a second statement marked B ; and the cost on the whole is found to be 36 a mile. It is proposed therefore to adopt R3-12 as the mileage limit within which we may sanction appointments.

4. Secondly, we would propose that the rates of pay for the higher classes of Revenue Establishment should exactly correspond to the rates of the Chief and Superintending Engineer classes of the Engineer Establishment. Hitherto the rates sanctioned for the highest class of Revenue Establishment have cor-

Superintending Engineer, class I, and State Railway Revenue, class I, grade 1	R 1,600	responded with the rates of the three Superintending Engineer classes of the Engineer Establishment ; and there is one special appointment for the North-
Superintending Engineer, class II, and State Railway Revenue, class I, grade 2	1,350	Western Railway, the rate for which corresponds to that of Chief Engineer,
Superintending Engineer, class III, and State Railway Revenue, class I, grade 3	1,100	1st class. We would propose now that

the rates of pay of Chief Engineers, 2nd and 3rd class, be also recognised as proper rates for our State Railway Revenue Establishment. This we consider to be necessary, because our Managers are for the most part drawn from the Engineer Branch ; and when an officer so transferred becomes entitled by his standing to promotion beyond the 1st class of Superintending Engineer, we are placed in a difficulty by having no higher ordinary rate to which to promote him.

5. We would therefore request Your Lordship's sanction to the following proposals :—

*First*, that R3-12 be the mileage limit within which we may sanction appointments to the managerial establishment of State Railways under our direct management :

*Secondly*, that the rates of pay for the higher classes of appointments, which may be sanctioned within the above limit, may correspond exactly with the rates sanctioned for the Chief and Superintending Engineer classes of the Engineer Establishment.

6. In the event of any increase above the pay of a Chief Engineer, 1st class, being required to ensure prolonged tenure of office by an individual, as suggested in paragraph 7 of Your Lordship's Despatch No. 70 (Railway), dated the 7th July 1887, with reference to the Directorship of the North-Western Railway, the case would not be covered by the mileage allowance, and would form the subject of special reference to the Secretary of State.

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No. 120 (Railway), dated 10th November 1887.

From—The Secretary of State for India,

To—The Government of India.

I have received Your Excellency's Financial letter No. 241, dated 20th September 1887, in which you propose certain changes (1) in the system of making appointments in the staff for the management of State Railways, and (2) in the scale of pay sanctioned for Managers on the State Railway Revenue Establishment.

2. In the Traffic and Locomotive Departments of the State Railway Revenue Establishment the aggregate cost of the staff under each head has been

fixed by mileage rates, within the limits of which your Government may exercise its discretion in arranging the establishment required on the different State Railways. It is now proposed to extend this system to the appointments on the staff of Managers of State Railways, which have hitherto been subject to the control of the Secretary of State, and that a mileage rate of Rs-12, based on the existing requirements of the State lines, should be taken as a limit within which your Government would have power to sanction appointments.

3. The number of Managers employed on State Railways is so limited, and the circumstances of their appointments differ so largely, varying from that of the Director of the North-Western Railway system, which embraces 2,483½ miles, to that of the Manager of the Nalhati Railway, 27½ miles in length, that it appears to me to be inappropriate and undesirable to apply to them a fixed rule based on mileage; nor do I consider it expedient to withdraw the questions of administration which are constantly arising from the changing circumstances of the Indian Railway system from the consideration and approval of the Secretary of State.

4. For these reasons I am of opinion that it would be better not to extend to the appointments of Managers the principle of mileage rates which is applied to the other classes of the Revenue Establishment.

5. The second proposal made by Your Excellency affects the scale of pay drawn by the higher classes of the Revenue Establishment, which you consider should exactly correspond to the rates of the Chief and Superintending Engineer classes of the Engineer Establishment.

6. In this question also it would appear that the number of cases to be dealt with is so small that it would be better to deal with each as it arises than to lay down any rigid rule.

7. There is no reason for supposing that the existing scale of pay is insufficient for the appointments comprised under the State Railway management, and my view is that any post of unusual importance should be dealt with as a special case, and be submitted for the sanction of the Secretary of State.

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### Railway Service Corps.

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No. 142 (Military), dated 3rd August 1888.

From—The Government of India,

To—The Secretary of State for India.

Lord Randolph Churchill's Railway Despatch No. 11, dated the 4th February 1886, conveyed general sanction to the formation of a Military Railway Service Corps, for employment on Frontier Railways. The organisation to be given to such a corps has accordingly been engaging our careful attention, and we have now the honour to address Your Lordship on the subject, and to explain the system that we propose to adopt for the purpose.

2. When this matter was under consideration in 1885, it was proposed that all the European staff of the Sind, Punjab and Frontier Railways should be enrolled as volunteers, and that out of these a picked body should be entertained for special service beyond the frontier, 600 or 800 strong, comprising engineers, locomotive and traffic officers, inspectors, clerks, &c. This was the arrangement to which Lord Randolph Churchill's approval was conveyed.

*Vide* Railway Despatch  
No. 151 R.T., dated 28th September 1885.



3. It will be seen from the correspondence annexed that, on the Manager, North-Western Railway, being called

From Director General of Railways, No. 1032 E., dated 26th May 1886, and annexures.  
To Director General of Railways, No. 695 E.E., dated 28th September 1886.  
From Director General of Railways, No. 874 E., dated 3rd May 1887, and annexures.

upon to submit for approval a draft of the rules and regulations he would propose for giving effect to this scheme, that officer raised certain points on which he asked for decisions before taking further

steps. These decisions, and the general principles on which the organisation should be based, are recorded in Public Works Department No. 695 R.E., dated the 28th September 1886. Lieutenant-Colonel Conway-Gordon's final proposals are contained in the enclosures to letter No. 874 E. of 3rd May 1887, from the Director General of Railways.

4. These proposals were considered in the Military and Public Works Departments; and as objections were raised that they did not give sufficient weight to the combatant element desirable in a corps whose operations would

\* His Excellency the Commander-in-Chief.  
The Hon. Lieutenant-General G. Chesney.  
The Hon. Sir Theodore Hope.

probably extend to a hostile country, the matter was discussed at a meeting\* held on the 29th September 1887, the proceedings of which are enclosed for Your Lordship's information, together with a

copy of the note, therein referred to, dated 24th September 1887, by the Honourable Sir Theodore Hope. It will be seen from the proceedings that it was decided to increase the combatant element in the corps, and to leave the elaboration of the scheme to a special committee.

5. The recommendations of this Committee were, with a few modifications, accepted by us, and we have now the honour to forward them for Your Lordship's consideration and sanction, together with three estimates showing the initial and recurring cost of the scheme. It will be seen that for the first two years the extra cost will be a little over a lakh per annum, and that in subsequent years the charge will be considerably under one lakh. These estimates are based on the assumption that the whole of the men required for the corps could be obtained in the first instance. This, however, is doubtful, and if the formation of the corps be sanctioned from the beginning of next year, the provision of ₹75,000 in the budget estimates will, we think, suffice.

6. The modifications we have made in the scheme proposed by the Committee are as follows :—

- (a) One Native bugler per company added on mobilisation.
- (b) The Paymaster and Quartermaster have been struck out. It might, however, be necessary to add the latter in war time.
- (c) The Bugle-Major to be a native.

7. We may here recapitulate, for Your Lordship's information, the general features of the scheme as now proposed.

(a) It provides for an "Army Railway Corps," consisting of—

22 British officers (including a paid Adjutant).

6 Native Officers.

4 Paid Staff Sergeants.

72 British Non-Commissioned Officers of the Railway Staff.

63 Native Non-Commissioned Officers and Buglers.

384 British Privates.

384 Sepoys.

935 Total of all ranks.

- (b) The corps to be organized into "construction companies" and "working companies," and armed and equipped as Sappers.
- (c) With the exception of the paid staff, the corps to be formed from the employés of the North-Western Railway—
  - (1) by the enlistment of civilian volunteers;
  - (2) by the entertainment of British soldiers on the completion of their colour service in the North-Western Railway Service, subject to enlistment in the corps;
  - (3) by the entertainment of sepoys with from 5 to 10 years' army service.
- (d) British and Native soldiers to receive their reserve pay in addition to their departmental pay whilst in the corps. With this exception the members of the corps, other than the military staff, to receive, in peace-time, no military pay or addition to their regimental allowances.
- (e) On mobilisation all ranks to receive an increase of 25 to 50 per cent. of pay, which would be a military charge. The increments to be regulated by the scales of extra allowances which it has been usual to grant to civilians, British and native, employed with an army in the field.
- (f) On mobilisation the corps to be under the Army Act, but in peace-time military law to be in abeyance, except in so far as it applies to volunteers.
- (g) The military training of the corps to be that prescribed for Engineer volunteers.

8. We would particularly invite Your Lordship's attention to Appendix B of the Committee's report, in which the difficulties attending the transfer of British soldiers to the proposed corps are explained. We trust that Your Lordship will be able to obtain the assent of the War Office to the transfer of the required number of men, with a view to their serving in the proposed corps instead of in the Army Reserve.

9. As these proposals differ considerably from those to which Lord Randolph Churchill gave his assent in 1885, we have thought it necessary to submit them for Your Lordship's approval. We would ask that this may be conveyed to us in time to admit of the corps being formed from the beginning of the next financial year, but, it will be understood that the sanction herein asked for is conditional on our being able to provide money for carrying out the project, after we have reviewed our financial position and the general requirements of the army with respect to the provision to be made in the military estimates of 1889-90. We need only add that by the formation of the proposed corps our military position will be greatly strengthened in case of those eventualities for which we are now preparing, and in a way which may be regarded as very economical compared with the military advantages which the possession of such a corps would ensure.

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